treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source if the State determines and documents in writing that 4-log treatment of viruses is no longer necessary for that ground water source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of § 141.402 of this subpart.

(d) Failure to meet the monitoring requirements of paragraph (b) of this section is a monitoring violation and requires the ground water system to provide public notification under § 141.204.

§ 141.404 Treatment technique violations for ground water systems.

(a) A ground water system with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the State) of receiving written notice from the State of the significant deficiency, the system:

(1) Does not complete corrective action in accordance with any applicable State plan review processes or other State guidance and direction, including State specified interim actions and measures, or

(2) Is not in compliance with a State-approved corrective action plan and schedule.

(b) Unless the State invalidates a fecal indicator-positive ground water source sample under § 141.402(d), a ground water system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the State) of meeting the conditions of § 141.403(a)(1) or § 141.403(a)(2), the system:

(1) Does not complete corrective action in accordance with any applicable State plan review processes or other State guidance and direction, including State-specified interim measures, or

(2) Is not in compliance with a State-approved corrective action plan and schedule.

(c) A ground water system subject to the requirements of § 141.403(b)(3) that fails to maintain at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source is in violation of the treatment technique requirement if the failure is not corrected within four hours of determining the system is not maintaining at least 4-log treatment of viruses before or at the first customer.

(d) Ground water system must give public notification under § 141.203 for the treatment technique violations specified in paragraphs (a), (b) and (c) of this section.

§ 141.405 Reporting and recordkeeping for ground water systems.

(a) *Reporting.* In addition to the requirements of § 141.31, a ground water system regulated under this subpart must provide the following information to the State:

(1) A ground water system conducting compliance monitoring under § 141.403(b) must notify the State any time the system fails to meet any State-specified requirements including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours. The ground water system must notify the State as soon as possible, but in no case later than the end of the next business day.

(2) After completing any corrective action under § 141.403(a), a ground water system must notify the State within 30 days of completion of the corrective action.

(3) If a ground water system subject to the requirements of § 141.402(a) does not conduct source water monitoring under § 141.402(a)(5)(ii), the system must provide documentation to the State within 30 days of the total coliform positive sample that it met the State criteria.

(b) *Recordkeeping.* In addition to the requirements of § 141.33, a ground water system regulated under this subpart must maintain the following information in its records:

(1) Documentation of corrective actions. Documentation shall be kept for a period of not less than ten years.

(2) Documentation of notice to the public as required under §141.403(a)(7). Documentation shall be kept for a period of not less than three years.

(3) Records of decisions under §141.402(a)(5)(ii) and records of invalidation of fecal indicator-positive ground water source samples under §141.402(d). Documentation shall be kept for a period of not less than five years.

(4) For consecutive systems, documentation of notification to the wholesale system(s) of total coliform-positive samples that are not invalidated under §141.21(c) until March 31, 2016, or under §141.853 beginning April 1, 2016. Documentation shall be kept for a period of not less than five years.

(5) For systems, including wholesale systems, that are required to perform compliance monitoring under §141.403(b):

(i) Records of the State-specified minimum disinfectant residual. Documentation shall be kept for a period of not less than ten years.

(ii) Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the State-prescribed minimum residual disinfectant concentration for a period of more than four hours. Documentation shall be kept for a period of not less than five years.

(iii) Records of State-specified compliance requirements for membrane filtration and of parameters specified by the State for State-approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than four hours. Documentation shall be kept for a period of not less than five years.

[71 FR 65653, Nov. 8, 2006, as amended at 78 FR 10353, Feb. 13, 2013]

Subpart T—Enhanced Filtration and Disinfection—Systems Serving Fewer Than 10,000 People

SOURCE: 67 FR 1839, Jan. 14, 2002, unless otherwise noted.

GENERAL REQUIREMENTS

§ 141.500 General requirements.

The requirements of this subpart constitute national primary drinking water regulations. These regulations establish requirements for filtration and disinfection that are in addition to criteria under which filtration and disinfection are required under subpart H of this part. The regulations in this subpart establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, *Cryptosporidium* and turbidity. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(a) At least 99 percent (2 log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or *Cryptosporidium* control under the watershed control plan for unfiltered systems; and

(b) Compliance with the profiling and benchmark requirements in §§141.530 through 141.544.

§ 141.501 Who is subject to the requirements of subpart T?

You are subject to these requirements if your system:

(a) Is a public water system;

(b) Uses surface water or GWUDI as a source; and

(c) Serves fewer than 10,000 persons.

§ 141.502 When must my system comply with these requirements?

You must comply with these requirements in this subpart beginning January 1, 2005, except where otherwise noted.

[69 FR 38856, June 29, 2004]

§ 141.503 What does subpart T require?

There are seven requirements of this subpart, and you must comply with all requirements that are applicable to your system. These requirements are:

(a) You must cover any finished water reservoir that you began to construct on or after March 15, 2002 as described in §§ 141.510 and 141.511;

(b) If your system is an unfiltered system, you must comply with the updated watershed control requirements described in §§ 141.520–141.522;

(c) If your system is a community or non-transient non-community water systems you must develop a disinfection profile as described in §§ 141.530–141.536;

(d) If your system is considering making a significant change to its disinfection practices, you must develop a disinfection benchmark and consult with the State for approval of the change as described in §§ 141.540–141.544;

(e) If your system is a filtered system, you must comply with the combined filter effluent requirements as described in §§ 141.550–141.553;

(f) If your system is a filtered system that uses conventional or direct filtration, you must comply with the individual filter turbidity requirements as described in §§ 141.560–141.564; and

(g) You must comply with the applicable reporting and recordkeeping requirements as described in §§ 141.570 and 141.571.

Finished Water Reservoirs

§ 141.510 Is my system subject to the new finished water reservoir requirements?

All subpart H systems which serve fewer than 10,000 are subject to this requirement.

§ 141.511 What is required of new finished water reservoirs?

If your system begins construction of a finished water reservoir on or after March 15, 2002 the reservoir must be covered. Finished water reservoirs for which your system began construction prior to March 15, 2002 are not subject to this requirement.

Additional Watershed Control Requirements for Unfiltered Systems

§ 141.520 Is my system subject to the updated watershed control requirements?

If you are a subpart H system serving fewer than 10,000 persons which does not provide filtration, you must continue to comply with all of the filtration avoidance criteria in § 141.71, as well as the additional watershed control requirements in § 141.521.

§ 141.521 What updated watershed control requirements must my unfiltered system implement to continue to avoid filtration?

Your system must take any additional steps necessary to minimize the potential for contamination by *Cryptosporidium* oocysts in the source water. Your system's watershed control program must, for *Cryptosporidium*:

(a) Identify watershed characteristics and activities which may have an adverse effect on source water quality; and

(b) Monitor the occurrence of activities which may have an adverse effect on source water quality.

§ 141.522 How does the State determine whether my system's watershed control requirements are adequate?

During an onsite inspection conducted under the provisions of § 141.71(b)(3), the State must determine whether your watershed control program is adequate to limit potential contamination by *Cryptosporidium* oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of your program to monitor and control detrimental activities occurring in the watershed; and the extent to which your system has maximized land ownership and/or controlled land use within the watershed.

Disinfection Profile

§ 141.530 What is a disinfection profile and who must develop one?

A disinfection profile is a graphical representation of your system's level of *Giardia lamblia* or virus inactivation

measured during the course of a year. If you are a subpart H community or non-transient non-community water system which serves fewer than 10,000 persons, your system must develop a disinfection profile unless your State determines that your system's profile is unnecessary. Your State may approve the use of a more representative data set for disinfection profiling than the data set required under §§ 141.532–141.536.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§ 141.531 What criteria must a State use to determine that a profile is unnecessary?

States may only determine that a system's profile is unnecessary if a system's TTHM and HAA5 levels are below 0.064 mg/L and 0.048 mg/L, respectively. To determine these levels, TTHM and HAA5 samples must be collected after January 1, 1998, during the month with the warmest water temperature, and at the point of maximum residence time in your distribution system. Your State may approve a more representative TTHM and HAA5 data set to determine these levels.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§ 141.532 How does my system develop a disinfection profile and when must it begin?

A disinfection profile consists of three steps:

(a) First, your system must collect data for several parameters from the plant as discussed in § 141.533 over the course of 12 months. If your system serves between 500 and 9,999 persons you must begin to collect data no later than July 1, 2003. If your system serves fewer than 500 persons you must begin to collect data no later than January 1, 2004.

(b) Second, your system must use this data to calculate weekly log inactivation as discussed in §§ 141.534 and 141.535; and

(c) Third, your system must use these weekly log inactivations to develop a disinfection profile as specified in § 141.536.

§ 141.533 What data must my system collect to calculate a disinfection profile?

Your system must monitor the following parameters to determine the total log inactivation using the analytical methods in § 141.74 (a), once per week on the same calendar day, over 12 consecutive months:

(a) The temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

(b) If your system uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

(c) The disinfectant contact time(s) ("T") during peak hourly flow; and

(d) The residual disinfectant concentration(s) ("C") of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow.

§ 141.534 How does my system use this data to calculate an inactivation ratio?

Use the tables in § 141.74(b)(3)(v) to determine the appropriate CT99.9 value. Calculate the total inactivation ratio as follows, and multiply the value by 3.0 to determine log inactivation of *Giardia lamblia:*

If your system * * *	Your system must determine * * *
(a) Uses only one point of disinfectant application.	(1) One inactivation ratio ($CTcalc/CT_{99.9}$) before or at the first customer during peak hourly flow or (2) Successive $CTcalc/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, your system must calculate the total inactivation ratio by determining ($CTcalc/CT_{99.9}$) for each sequence and then adding the ($CTcalc/CT_{99.9}$) values together to determine ($\Sigma CTcalc/CT_{99.9}$).
(b) Uses more than one point of disinfectant application before the first customer.	The ($CTcalc/CT_{99.9}$) value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow using the procedure specified in paragraph (a)(2) of this section.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§ 141.535 What if my system uses chloramines, ozone, or chlorine dioxide for primary disinfection?

If your system uses chloramines, ozone, or chlorine dioxide for primary disinfection, you must also calculate the logs of inactivation for viruses and develop an additional disinfection profile for viruses using methods approved by the State.

§ 141.536 My system has developed an inactivation ratio; what must we do now?

Each log inactivation serves as a data point in your disinfection profile. Your system will have obtained 52 measurements (one for every week of the year). This will allow your system and the State the opportunity to evaluate how microbial inactivation varied over the course of the year by looking at all 52 measurements (your Disinfection Profile). Your system must retain the Disinfection Profile data in graphic form, such as a spreadsheet, which must be available for review by the State as part of a sanitary survey. Your system must use this data to calculate a benchmark if you are considering changes to disinfection practices.

DISINFECTION BENCHMARK

§ 141.540 Who has to develop a disinfection benchmark?

If you are a subpart H system required to develop a disinfection profile under §§141.530 through 141.536, your system must develop a Disinfection Benchmark if you decide to make a significant change to your disinfection practice. Your system must consult with the State for approval before you can implement a significant disinfection practice change.

§ 141.541 What are significant changes to disinfection practice?

Significant changes to disinfection practice include:

(a) Changes to the point of disinfection;

(b) Changes to the disinfectant(s) used in the treatment plant;

(c) Changes to the disinfection process; or

(d) Any other modification identified by the State.

§ 141.542 What must my system do if we are considering a significant change to disinfection practices?

If your system is considering a significant change to its disinfection practice, your system must calculate a disinfection benchmark(s) as described in §§141.543 and 141.544 and provide the benchmark(s) to your State. Your system may only make a significant disinfection practice change after consulting with the State for approval. Your system must submit the following information to the State as part of the consultation and approval process:

(a) A description of the proposed change;

(b) The disinfection profile for *Giardia lamblia* (and, if necessary, viruses) and disinfection benchmark;

(c) An analysis of how the proposed change will affect the current levels of disinfection; and

(d) Any additional information requested by the State.

§ 141.543 How is the disinfection benchmark calculated?

If your system is making a significant change to its disinfection practice, it must calculate a disinfection benchmark using the procedure specified in the following table.

To calculate a disinfection benchmark your system must perform the following steps
Step 1: Using the data your system collected to develop the Disinfection Profile, determine the average *Giardia lamblia* inactivation for each calendar month by dividing the sum of all *Giardia lamblia* inactivations for that month by the number of values calculated for that month.
Step 2: Determine the lowest monthly average value out of the twelve values. This value becomes the disinfection benchmark.

§ 141.544 What if my system uses chloramines, ozone, or chlorine dioxide for primary disinfection?

If your system uses chloramines, ozone or chlorine dioxide for primary disinfection your system must calculate the disinfection benchmark from the data your system collected for viruses to develop the disinfection profile in addition to the *Giardia lamblia* disinfection benchmark calculated under §141.543. This viral benchmark must be calculated in the same manner used to calculate the *Giardia lamblia* disinfection benchmark in §141.543.

COMBINED FILTER EFFLUENT REQUIREMENTS

§ 141.550 Is my system required to meet subpart T combined filter effluent turbidity limits?

All subpart H systems which serve populations fewer than 10,000, are required to filter, and utilize filtration other than slow sand filtration or diatomaceous earth filtration must meet the combined filter effluent turbidity requirements of §§141.551–141.553 . If your system uses slow sand or diatomaceous earth filtration you are not required to meet the combined filter effluent turbidity limits of subpart T, but you must continue to meet the combined filter effluent turbidity limits in §141.73.

§ 141.551 What strengthened combined filter effluent turbidity limits must my system meet?

Your system must meet two strengthened combined filter effluent turbidity limits.

(a) The first combined filter effluent turbidity limit is a "95th percentile" turbidity limit that your system must meet in at least 95 percent of the turbidity measurements taken each month. Measurements must continue to be taken as described in §141.74(a) and (c). Monthly reporting must be completed according to §141.570. The following table describes the required limits for specific filtration technologies.

If your system consists of * * *	Your 95th percentile turbidity value is * * *
(1) Conventional Filtration or Direct Filtration.	0.3 NTU.
(2) All other "Alternative" Filtration	A value determined by the State (not to exceed 1 NTU) based on the demonstration described in §141.552.

(b) The second combined filter effluent turbidity limit is a "maximum" turbidity limit which your system may at no time exceed during the month. Measurements must continue to be taken as described in §141.74(a) and (c). Monthly reporting must be completed according to §141.570. The following table describes the required limits for specific filtration technologies.

If your system consists of * * *	Your maximum turbidity value is * * *
(1) Conventional Filtration or Direct Filtration.	1 NTU.
(2) All other "Alternative Filtration"	A value determined by the State (not to exceed 5 NTU) based on the demonstration as described in §141.552.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§ 141.552 My system consists of "alternative filtration" and is required to conduct a demonstration—what is required of my system and how does the State establish my turbidity limits?

(a) If your system consists of alternative filtration(filtration other than slow sand filtration, diatomaceous earth filtration, conventional filtration, or direct filtration) you are required to conduct a demonstration (see tables in §141.551). Your system must demonstrate to the State, using pilot plant studies or other means, that your system's filtration, in combination with disinfection treatment, consistently achieves:

(1) 99 percent removal of *Cryptosporidium* oocysts;

(2) 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts; and

(3) 99.99 percent removal and/or inactivation of viruses.

(b) [Reserved]

§ 141.553 My system practices lime softening—is there any special provision regarding my combined filter effluent?

If your system practices lime softening, you may acidify representative combined filter effluent turbidity samples prior to analysis using a protocol approved by the State.

INDIVIDUAL FILTER TURBIDITY REQUIREMENTS

§ 141.560 Is my system subject to individual filter turbidity requirements?

If your system is a subpart H system serving fewer than 10,000 people and utilizing conventional filtration or direct filtration, you must conduct continuous monitoring of turbidity for each individual filter at your system. The following requirements apply to continuous turbidity monitoring:

(a) Monitoring must be conducted using an approved method in §141.74(a);

(b) Calibration of turbidimeters must be conducted using procedures specified by the manufacturer;

(c) Results of turbidity monitoring must be recorded at least every 15 minutes;

(d) Monthly reporting must be completed according to §141.570; and

(e) Records must be maintained according to §141.571.

§ 141.561 What happens if my system's turbidity monitoring equipment fails?

If there is a failure in the continuous turbidity monitoring equipment, your system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is back on-line. Your system has 14 days to resume continuous monitoring before a violation is incurred.

§ 141.562 My system only has two or fewer filters—is there any special provision regarding individual filter turbidity monitoring?

Yes, if your system only consists of two or fewer filters, you may conduct continuous monitoring of combined filter effluent turbidity in lieu of individual filter effluent turbidity monitoring. Continuous monitoring must meet the same requirements set forth in §141.560(a) through (d) and §141.561.

§ 141.563 What follow-up action is my system required to take based on continuous turbidity monitoring?

Follow-up action is required according to the following tables:

If * * *	Your system must * * *
(a) The turbidity of an individual filter (or the turbidity of combined filter effluent (CFE) for systems with 2 filters that monitor CFE in lieu of individual filters) exceeds 1.0 NTU in two consecutive recordings 15 minutes apart.	Report to the State by the 10th of the following month and include the filter number(s), corresponding date(s), turbidity value(s) which exceeded 1.0 NTU, and the cause (if known) for the exceedance(s).

If a system was required to report to the State * * *	Your system must * * *
(b) For three months in a row and turbidity exceeded 1.0 NTU in two consecutive recordings 15 minutes apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters).	Conduct a self-assessment of the filter(s) within 14 days of the day the filter exceeded 1.0 NTU in two consecutive measurements for the third straight month unless a CPE as specified in paragraph (c) of this section was required. Systems with 2 filters that monitor CFE in lieu of individual filters must conduct a self assessment on both filters. The self-assessment must consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.
(c) For two months in a row and turbidity exceeded 2.0 NTU in 2 consecutive recordings 15 minutes apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters).	Arrange to have a comprehensive performance evaluation (CPE) conducted by the State or a third party approved by the State not later than 60 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month. If a CPE has been completed by the State or a third party approved by the State within the 12 prior months or the system and State are jointly participating in an ongoing Comprehensive Technical Assistance (CTA) project at the system, a new CPE is not required. If conducted, a CPE must be completed and submitted to the State no later than 120 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§ 141.564 My system practices lime softening—is there any special provision regarding my individual filter turbidity monitoring?

If your system utilizes lime softening, you may apply to the State for alternative turbidity exceedance levels for the levels specified in the table in §141.563. You must be able to demonstrate to the State that higher turbidity levels are due to lime carryover only, and not due to degraded filter performance.

REPORTING AND RECORDKEEPING REQUIREMENTS

§ 141.570 What does subpart T require that my system report to the State?

This subpart T requires your system to report several items to the State. The following table describes the items which must be reported and the frequency of reporting. Your system is required to report the information described in the following table, if it is subject to the specific requirement shown in the first column.

Corresponding requirement	Description of information to report	Frequency
(a) Combined Filter Effluent Requirements. (§§ 141.550–141.553)	(1) The total number of filtered water turbidity measurements taken during the month.	By the 10th of the following month.
	(2) The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to your system's required 95th percentile limit.	By the 10th of the following month.
	(3) The date and value of any turbidity measurements taken during the month which exceed the maximum turbidity value for your filtration system.	By the 10th of the following month.
(b) Individual Turbidity Requirements. (§§ 141.560–141.564)	(1) That your system conducted individual filter turbidity monitoring during the month.	By the 10th of the following month.
	(2) The filter number(s), corresponding date(s), and the turbidity value(s) which exceeded 1.0 NTU during the month, and the cause (if known) for the exceedance(s), but only if 2 consecutive measurements exceeded 1.0 NTU.	By the 10th of the following month.
	(3) If a self-assessment is required, the date that it was triggered and the date that it was completed.	By the 10th of the following month (or 14 days after the self-assessment was triggered only if the self-assessment was triggered during the last four days of the month)
	(4) If a CPE is required, that the CPE is required and the date that it was triggered.	By the 10th of the following month.
	(5) Copy of completed CPE report	Within 120 days after the CPE was triggered.
(c) Disinfection Profiling (§§ 141.530–141.536)	(1) Results of optional monitoring which show TTHM levels <0.064 mg/l and HAA5 levels <0.048 mg/l (Only if your system wishes to forgo profiling) or that your system has begun disinfection profiling.	(i) For systems serving 500–9,999 by July 1, 2003; (ii) For systems serving fewer than 500 by January 1, 2004.
(d) Disinfection Benchmarking. (§§ 141.540–141.544)	(1) A description of the proposed change in disinfection, your system's disinfection profile for Giardia lamblia (and, if necessary, viruses) and disinfection benchmark, and an analysis of how the proposed change will affect the current levels of disinfection.	Anytime your system is considering a significant change to its disinfection practice.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38857, June 29, 2004]

§ 141.571 What records does subpart T require my system to keep?

Your system must keep several types of records based on the requirements of subpart T, in addition to recordkeeping requirements under §141.75. The following table describes the necessary records, the length of time these records must be kept, and for which requirement the records pertain. Your

system is required to maintain records described in this table, if it is subject to the specific requirement shown in the first column.

Corresponding requirement	Description of necessary records	Duration of time records must be kept
(a) Individual Filter Turbidity Requirements (§§ 141.560–141.564)	Results of individual filter monitoring	At least 3 years.
(b) Disinfection Profiling (§§ 141.530–141.536)	Results of Profile (including raw data and analysis)	Indefinitely.
(c) Disinfection Benchmarking (§§ 141.540–141.544)	Benchmark (including raw data and analysis)	Indefinitely.

Subpart U—Initial Distribution System Evaluations

SOURCE: 71 FR 483, Jan. 4, 2006, unless otherwise noted.

§ 141.600 General requirements.

(a) The requirements of subpart U of this part constitute national primary drinking water regulations. The regulations in this subpart establish monitoring and other requirements for identifying subpart V compliance monitoring locations for determining compliance with maximum contaminant levels for total trihalomethanes (TTHM) and haloacetic acids (five)(HAA5). You must use an Initial Distribution System Evaluation (IDSE) to determine locations with representative high TTHM and HAA5 concentrations throughout your distribution system. IDSEs are used in conjunction with, but separate from, subpart L compliance monitoring, to identify and select subpart V compliance monitoring locations.

(b) *Applicability.* You are subject to these requirements if your system is a community water system that uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light; or if your system is a nontransient noncommunity water system that serves at least 10,000 people and uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.

(c) *Schedule.* (1) You must comply with the requirements of this subpart on the schedule in the table in this paragraph (c)(1).

If you serve this population	You must submit your standard monitoring plan or system specific study plan[1] or 40/30 certification[2] to the State by or receive very small system waiver from State	You must complete your standard monitoring or system specific study by	You must submit your IDSE report to the State by[3]
Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system			
(i) ≥100,000	October 1, 2006	September 30, 2008	January 1, 2009.
(ii) 50,000–99,999	April 1, 2007	March 31, 2009	July 1, 2009.
(iii) 10,000–49,999.	October 1, 2007	September 30, 2009	January 1, 2010.
(iv) <10,000 (CWS Only).	April 1, 2008	March 31, 2010	July 1, 2010.
Other systems that are part of a combined distribution system			
(v) Wholesale system or consecutive system.	—at the same time as the system with the earliest compliance date in the combined distribution system.	—at the same time as the system with the earliest compliance date in the combined distribution system.	—at the same time as the system with the earliest compliance date in the combined distribution system.

[1] If, within 12 months after the date identified in this column, the State does not approve your plan or notify you that it has not yet completed its review, you may consider the plan that you submitted as approved. You must implement that plan and you must complete standard monitoring or a system specific study no later than the date identified in the third column.

[2] You must submit your 40/30 certification under § 141.603 by the date indicated.

[3] If, within three months after the date identified in this column (nine months after the date identified in this column if you must comply on the schedule in paragraph (c)(1)(iii) of this section), the State does not approve your IDSE report or notify you that it has not yet completed its review, you may consider the report that you submitted as approved and you must implement the recommended subpart V monitoring as required.

(2) For the purpose of the schedule in paragraph (c)(1) of this section, the State may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The State may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.

(d) You must conduct standard monitoring that meets the requirements in §141.601, or a system specific study that meets the requirements in §141.602, or certify to the State that you meet 40/30 certification criteria under §141.603, or qualify for a very small system waiver under §141.604.

(1) You must have taken the full complement of routine TTHM and HAA5 compliance samples required of a system with your population and source water under subpart L of this part (or you must have taken the full complement of reduced TTHM and HAA5 compliance samples required of a system with your population and source water under subpart L if you meet reduced monitoring criteria under subpart L of this part) during the period specified in §141.603(a) to meet the 40/30 certification criteria in §141.603. You must have taken TTHM and HAA5 samples under §§141.131 and 141.132 to be eligible for the very small system waiver in §141.604.

(2) If you have not taken the required samples, you must conduct standard monitoring that meets the requirements in §141.601, or a system specific study that meets the requirements in §141.602.

(e) You must use only the analytical methods specified in §141.131, or otherwise approved by EPA for monitoring under this subpart, to demonstrate compliance with the requirements of this subpart.

(f) IDSE results will not be used for the purpose of determining compliance with MCLs in §141.64.

§141.601 Standard monitoring.

(a) *Standard monitoring plan.* Your standard monitoring plan must comply with paragraphs (a)(1) through (a)(4) of this section. You must prepare and submit your standard monitoring plan to the State according to the schedule in §141.600(c).

(1) Your standard monitoring plan must include a schematic of your distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating locations and dates of all projected standard monitoring, and all projected subpart L compliance monitoring.

(2) Your standard monitoring plan must include justification of standard monitoring location selection and a summary of data you relied on to justify standard monitoring location selection.

(3) Your standard monitoring plan must specify the population served and system type (subpart H or ground water).

(4) You must retain a complete copy of your standard monitoring plan submitted under this paragraph (a), including any State modification of your standard monitoring plan, for as long as you are required to retain your IDSE report under paragraph (c)(4) of this section.

(b) *Standard monitoring.* (1) You must monitor as indicated in the table in this paragraph (b)(1). You must collect dual sample sets at each monitoring location. One sample in the dual sample set must be analyzed for TTHM. The other sample in the dual sample set must be analyzed for HAA5. You must conduct one monitoring period during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature. You must review available compliance, study, or operational data to determine the peak historical month for TTHM or HAA5 levels or warmest water temperature.

Source water type	Population size category	Monitoring periods and frequency of sampling	Distribution system monitoring locations [1]				
			Total per monitoring period	Near entry points	Average residence time	High TTHM locations	High HAA5 locations
Subpart H							
	<500 consecutive systems.	one (during peak historical month) [2].	2	1	.....	1	
	<500 non-consecutive systems.	.....	2	.....	.....	1	1
	500–3,300 consecutive systems.	four (every 90 days)	2	1	.....	1	
	500–3,300 non-consecutive systems.	.....	2	.....	.....	1	1
	3,301–9,999	.....	4	.....	1	2	1
	10,000–49,999	six (every 60 days)	8	1	2	3	2
	50,000–249,999	.....	16	3	4	5	4
	250,000–999,999	.....	24	4	6	8	6
	1,000,000–4,999,999	.....	32	6	8	10	8
	≥5,000,000	.....	40	8	10	12	10
Ground Water							
	<500 consecutive systems.	one (during peak historical month) [2].	2	1	.....	1	
	<500 non-consecutive systems.	.....	2	.....	.....	1	1
	500–9,999	four (every 90 days)	2	.....	.....	1	1
	10,000–99,999	.....	6	1	1	2	2
	100,000–499,999	.....	8	1	1	3	3
	≥500,000	.....	12	2	2	4	4

[1] A dual sample set (*i.e.*, a TTHM and an HAA5 sample) must be taken at each monitoring location during each monitoring period.

[2] The peak historical month is the month with the highest TTHM or HAA5 levels or the warmest water temperature.

(2) You must take samples at locations other than the existing subpart L monitoring locations. Monitoring locations must be distributed throughout the distribution system.

(3) If the number of entry points to the distribution system is fewer than the specified number of entry point monitoring locations, excess entry point samples must be replaced equally at high TTHM and HAA5 locations. If there is an odd extra location number, you must take a sample at a high TTHM location. If the number of entry points to the distribution system is more than the specified number of entry point monitoring locations, you must take samples at entry points to the distribution system having the highest annual water flows.

(4) Your monitoring under this paragraph (b) may not be reduced under the provisions of §141.29 and the State may not reduce your monitoring using the provisions of §142.16(m).

(c) *IDSE report.* Your IDSE report must include the elements required in paragraphs (c)(1) through (c)(4) of this section. You must submit your IDSE report to the State according to the schedule in §141.600(c).

(1) Your IDSE report must include all TTHM and HAA5 analytical results from subpart L compliance monitoring and all standard monitoring conducted during the period of the IDSE as individual analytical results and LRAAs presented in a tabular or spreadsheet format acceptable to the State. If changed from your standard monitoring plan submitted under paragraph (a) of this section, your report must also include a schematic of your distribution system, the population served, and system type (subpart H or ground water).

(2) Your IDSE report must include an explanation of any deviations from your approved standard monitoring plan.

(3) You must recommend and justify subpart V compliance monitoring locations and timing based on the protocol in §141.605.

(4) You must retain a complete copy of your IDSE report submitted under this section for 10 years after the date that you submitted your report. If the

State modifies the subpart V monitoring requirements that you recommended in your IDSE report or if the State approves alternative monitoring locations, you must keep a copy of the State's notification on file for 10 years after the date of the State's notification. You must make the IDSE report and any State notification available for review by the State or the public.

§ 141.602 System specific studies.

(a) *System specific study plan.* Your system specific study plan must be based on either existing monitoring results as required under paragraph (a)(1) of this section or modeling as required under paragraph (a)(2) of this section. You must prepare and submit your system specific study plan to the State according to the schedule in § 141.600(c).

(1) *Existing monitoring results.* You may comply by submitting monitoring results collected before you are required to begin monitoring under § 141.600(c). The monitoring results and analysis must meet the criteria in paragraphs (a)(1)(i) and (a)(1)(ii) of this section.

(i) *Minimum requirements.* (A) TTHM and HAA5 results must be based on samples collected and analyzed in accordance with § 141.131. Samples must be collected no earlier than five years prior to the study plan submission date.

(B) The monitoring locations and frequency must meet the conditions identified in this paragraph (a)(1)(i)(B). Each location must be sampled once during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature for every 12 months of data submitted for that location. Monitoring results must include all subpart L compliance monitoring results plus additional monitoring results as necessary to meet minimum sample requirements.

System Type	Population size category	Number of monitoring locations	Number of samples	
			TTHM	HAA5
Subpart H:				
	<500	3	3	3
	500–3,300	3	9	9
	3,301–9,999	6	36	36
	10,000–49,999	12	72	72
	50,000–249,999	24	144	144
	250,000–999,999	36	216	216
	1,000,000–4,999,999	48	288	288
	≥5,000,000	60	360	360
Ground Water:				
	<500	3	3	3
	500–9,999	3	9	9
	10,000–99,999	12	48	48
	100,000–499,999	18	72	72
	≥500,000	24	96	96

(ii) *Reporting monitoring results.* You must report the information in this paragraph (a)(1)(ii).

(A) You must report previously collected monitoring results and certify that the reported monitoring results include all compliance and non-compliance results generated during the time period beginning with the first reported result and ending with the most recent subpart L results.

(B) You must certify that the samples were representative of the entire distribution system and that treatment, and distribution system have not changed significantly since the samples were collected.

(C) Your study monitoring plan must include a schematic of your distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating the locations and dates of all completed or planned system specific study monitoring.

(D) Your system specific study plan must specify the population served and system type (subpart H or ground water).

(E) You must retain a complete copy of your system specific study plan submitted under this paragraph (a)(1), including any State modification of your system specific study plan, for as long as you are required to retain your IDSE report under paragraph (b)(5) of this section.

(F) If you submit previously collected data that fully meet the number of samples required under paragraph (a)(1)(i)(B) of this section and the State rejects some of the data, you must either conduct additional monitoring to replace rejected data on a schedule the State approves or conduct standard monitoring under §141.601.

(2) *Modeling.* You may comply through analysis of an extended period simulation hydraulic model. The extended period simulation hydraulic model and analysis must meet the criteria in this paragraph (a)(2).

(i) *Minimum requirements.* (A) The model must simulate 24 hour variation in demand and show a consistently repeating 24 hour pattern of residence time.

(B) The model must represent the criteria listed in paragraphs (a)(2)(i)(B)(1) through (9) of this section.

(1) 75% of pipe volume;

(2) 50% of pipe length;

(3) All pressure zones;

(4) All 12-inch diameter and larger pipes;

(5) All 8-inch and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves, or are known or expected to be significant conveyors of water;

(6) All 6-inch and larger pipes that connect remote areas of a distribution system to the main portion of the system;

(7) All storage facilities with standard operations represented in the model; and

(8) All active pump stations with controls represented in the model; and

(9) All active control valves.

(C) The model must be calibrated, or have calibration plans, for the current configuration of the distribution system during the period of high TTHM formation potential. All storage facilities must be evaluated as part of the calibration process. All required calibration must be completed no later than 12 months after plan submission.

(ii) *Reporting modeling.* Your system specific study plan must include the information in this paragraph (a)(2)(ii).

(A) Tabular or spreadsheet data demonstrating that the model meets requirements in paragraph (a)(2)(i)(B) of this section.

(B) A description of all calibration activities undertaken, and if calibration is complete, a graph of predicted tank levels versus measured tank levels for the storage facility with the highest residence time in each pressure zone, and a time series graph of the residence time at the longest residence time storage facility in the distribution system showing the predictions for the entire simulation period (*i.e.*, from time zero until the time it takes to for the model to reach a consistently repeating pattern of residence time).

(C) Model output showing preliminary 24 hour average residence time predictions throughout the distribution system.

(D) Timing and number of samples representative of the distribution system planned for at least one monitoring period of TTHM and HAA5 dual sample monitoring at a number of locations no less than would be required for the system under standard monitoring in §141.601 during the historical month of high TTHM. These samples must be taken at locations other than existing subpart L compliance monitoring locations.

(E) Description of how all requirements will be completed no later than 12 months after you submit your system specific study plan.

(F) Schematic of your distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating the locations and dates of all completed system specific study monitoring (if calibration is complete) and all subpart L compliance monitoring.

(G) Population served and system type (subpart H or ground water).

(H) You must retain a complete copy of your system specific study plan submitted under this paragraph (a)(2), including any State modification of your system specific study plan, for as long as you are required to retain your IDSE report under paragraph (b)(7) of this section.

(iii) If you submit a model that does not fully meet the requirements under paragraph (a)(2) of this section, you must correct the deficiencies and respond to State inquiries concerning the model. If you fail to correct deficiencies or respond to inquiries to the State's satisfaction, you must conduct standard monitoring under §141.601.

(b) *IDSE report.* Your IDSE report must include the elements required in paragraphs (b)(1) through (b)(6) of this section. You must submit your IDSE report according to the schedule in §141.600(c).

(1) Your IDSE report must include all TTHM and HAA5 analytical results from subpart L compliance monitoring and all system specific study monitoring conducted during the period of the system specific study presented in a tabular or spreadsheet format acceptable to the State. If changed from your system specific study plan submitted under paragraph (a) of this section, your IDSE report must also include a schematic of your distribution system, the population served, and system type (subpart H or ground water).

(2) If you used the modeling provision under paragraph (a)(2) of this section, you must include final information for the elements described in paragraph (a)(2)(ii) of this section, and a 24-hour time series graph of residence time for each subpart V compliance monitoring location selected.

(3) You must recommend and justify subpart V compliance monitoring locations and timing based on the protocol in §141.605.

(4) Your IDSE report must include an explanation of any deviations from your approved system specific study plan.

(5) Your IDSE report must include the basis (analytical and modeling results) and justification you used to select the recommended subpart V monitoring locations.

(6) You may submit your IDSE report in lieu of your system specific study plan on the schedule identified in §141.600(c) for submission of the system specific study plan if you believe that you have the necessary information by the time that the system specific study plan is due. If you elect this approach, your IDSE report must also include all information required under paragraph (a) of this section.

(7) You must retain a complete copy of your IDSE report submitted under this section for 10 years after the date that you submitted your IDSE report. If the State modifies the subpart V monitoring requirements that you recommended in your IDSE report or if the State approves alternative monitoring locations, you must keep a copy of the State's notification on file for 10 years after the date of the State's notification. You must make the IDSE report and any State notification available for review by the State or the public.

§141.603 40/30 certification.

(a) *Eligibility.* You are eligible for 40/30 certification if you had no TTHM or HAA5 monitoring violations under subpart L of this part and no individual sample exceeded 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 during an eight consecutive calendar quarter period beginning no earlier than the date specified in this paragraph (a).

If your 40/30 certification is due	Then your eligibility for 40/30 certification is based on eight consecutive calendar quarters of subpart L compliance monitoring results beginning no earlier than [1]
(1) October 1, 2006	January 2004.
(2) April 1, 2007	January 2004.
(3) October 1, 2007	January 2005.
(4) April 1, 2008	January 2005.

[1] Unless you are on reduced monitoring under subpart L of this part and were not required to monitor during the specified period. If you did not monitor during the specified period, you must base your eligibility on compliance samples taken during the 12 months preceding the specified period.

(b) *40/30 certification.* (1) You must certify to your State that every individual compliance sample taken under subpart L of this part during the periods specified in paragraph (a) of this section were ≤0.040 mg/L for TTHM and ≤0.030 mg/L for HAA5, and that you have not had any TTHM or HAA5 monitoring violations during the period

specified in paragraph (a) of this section.

(2) The State may require you to submit compliance monitoring results, distribution system schematics, and/or recommended subpart V compliance monitoring locations in addition to your certification. If you fail to submit the requested information, the State may require standard monitoring under §141.601 or a system specific study under §141.602.

(3) The State may still require standard monitoring under §141.601 or a system specific study under §141.602 even if you meet the criteria in paragraph (a) of this section.

(4) You must retain a complete copy of your certification submitted under this section for 10 years after the date that you submitted your certification. You must make the certification, all data upon which the certification is based, and any State notification available for review by the State or the public.

§141.604 Very small system waivers.

(a) If you serve fewer than 500 people and you have taken TTHM and HAA5 samples under subpart L of this part, you are not required to comply with this subpart unless the State notifies you that you must conduct standard monitoring under §141.601 or a system specific study under §141.602.

(b) If you have not taken TTHM and HAA5 samples under subpart L of this part or if the State notifies you that you must comply with this subpart, you must conduct standard monitoring under §141.601 or a system specific study under §141.602.

§141.605 Subpart V compliance monitoring location recommendations.

(a) Your IDSE report must include your recommendations and justification for where and during what month(s) TTHM and HAA5 monitoring for subpart V of this part should be conducted. You must base your recommendations on the criteria in paragraphs (b) through (e) of this section.

(b) You must select the number of monitoring locations specified in the table in this paragraph (b). You will use these recommended locations as subpart V routine compliance monitoring locations, unless State requires different or additional locations. You should distribute locations throughout the distribution system to the extent possible.

Source water type	Population size category	Monitoring frequency [1]	Distribution system monitoring location			
			Total per monitoring period [2]	Highest TTHM locations	Highest HAA5 locations	Existing subpart L compliance locations
Subpart H:						
	<500	per year	2	1	1	.....
	500–3,300	per quarter	2	1	1	
	3,301–9,999	per quarter	2	1	1	.....
	10,000–49,999	per quarter	4	2	1	1
	50,000–249,999	per quarter	8	3	3	2
	250,000–999,999	per quarter	12	5	4	3
	1,000,000–4,999,999	per quarter	16	6	6	4
	≥5,000,000	per quarter	20	8	7	5
Ground water:						
	<500	per year	2	1	1	
	500–9,999	per year	2	1	1	
	10,000–99,999	per quarter	4	2	1	1
	100,000–499,999	per quarter	6	3	2	1
	≥500,000	per quarter	8	3	3	2

[1] All systems must monitor during month of highest DBP concentrations.

[2] Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500–3,300. Ground water systems serving 500–9,999 on annual monitoring must take dual sample sets at each monitoring location. All other systems on annual monitoring and subpart H systems serving 500–3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For systems serving fewer than 500 people, only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month.

(c) You must recommend subpart V compliance monitoring locations based on standard monitoring results, system specific study results, and subpart L compliance monitoring results. You must follow the protocol in paragraphs (c)(1) through (c)(8) of this section. If required to monitor at more than eight locations, you must repeat the protocol as necessary. If you do not have existing subpart L compliance monitoring results or if you do not have enough existing subpart L compliance monitoring results, you must repeat the protocol, skipping the provisions of paragraphs (c)(3) and (c)(7) of this section as necessary, until you have identified the required total number of monitoring locations.

(1) Location with the highest TTHM LRAA not previously selected as a subpart V monitoring location.

(2) Location with the highest HAA5 LRAA not previously selected as a subpart V monitoring location.

(3) Existing subpart L average residence time compliance monitoring location (maximum residence time compliance monitoring location for ground water systems) with the highest HAA5 LRAA not previously selected as a subpart V monitoring location.

(4) Location with the highest TTHM LRAA not previously selected as a subpart V monitoring location.

(5) Location with the highest TTHM LRAA not previously selected as a subpart V monitoring location.

(6) Location with the highest HAA5 LRAA not previously selected as a subpart V monitoring location.

(7) Existing subpart L average residence time compliance monitoring location (maximum residence time compliance monitoring location for ground water systems) with the highest TTHM LRAA not previously selected as a subpart V monitoring location.

(8) Location with the highest HAA5 LRAA not previously selected as a subpart V monitoring location.

(d) You may recommend locations other than those specified in paragraph (c) of this section if you include a rationale for selecting other locations. If the State approves the alternate locations, you must monitor at these locations to determine compliance under subpart V of this part.

(e) Your recommended schedule must include subpart V monitoring during the peak historical month for TTHM and HAA5 concentration, unless the State approves another month. Once you have identified the peak historical month, and if you are required to conduct routine monitoring at least quarterly, you must schedule subpart V compliance monitoring at a regular frequency of every 90 days or fewer.

[71 FR 483, Jan. 4, 2006, as amended at 74 FR 30958, June 29, 2009]

Subpart V—Stage 2 Disinfection Byproducts Requirements

SOURCE: 71 FR 488, Jan. 4, 2006, unless otherwise noted.

§ 141.620 General requirements.

(a) *General.* The requirements of subpart V of this part constitute national primary drinking water regulations. The regulations in this subpart establish monitoring and other requirements for achieving compliance with maximum contaminant levels based on locational running annual averages (LRAA) for total trihalomethanes (TTHM) and haloacetic acids (five)(HAA5), and for achieving compliance with maximum residual disinfectant residuals for chlorine and chloramine for certain consecutive systems.

(b) *Applicability.* You are subject to these requirements if your system is a community water system or a nontransient noncommunity water system that uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.

(c) *Schedule.* You must comply with the requirements in this subpart on the schedule in the following table based on your system type.

If you are this type of system	You must comply with subpart V monitoring by: [1]
Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system	
(1) System serving ≥100,000	April 1, 2012.
(2) System serving 50,000–99,999	October 1, 2012.
(3) System serving 10,000–49,999	October 1, 2013.
(4) System serving <10,000	October 1, 2013 if no *Cryptosporidium* monitoring is required under §141.701(a)(4) or October 1, 2014 if *Cryptosporidium* monitoring is required under §141.701(a)(4) or (a)(6)
Other systems that are part of a combined distribution system	
(5) Consecutive system or wholesale system	—at the same time as the system with the earliest compliance date in the combined distribution system.

[1] The State may grant up to an additional 24 months for compliance with MCLs and operational evaluation levels if you require capital improvements to comply with an MCL.

(6) Your monitoring frequency is specified in §141.621(a)(2).

(i) If you are required to conduct quarterly monitoring, you must begin monitoring in the first full calendar quarter that includes the compliance date in the table in this paragraph (c).

(ii) If you are required to conduct monitoring at a frequency that is less than quarterly, you must begin monitoring in the calendar month recommended in the IDSE report prepared under §141.601 or §141.602 or the calendar month identified in the subpart V monitoring plan developed under §141.622 no later than 12 months after the compliance date in this table.

(7) If you are required to conduct quarterly monitoring, you must make compliance calculations at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter (or earlier if the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters). If you are required to conduct monitoring at a frequency that is less than quarterly, you must make compliance calculations beginning with the first compliance sample taken after the compliance date.

(8) For the purpose of the schedule in this paragraph (c), the State may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The State may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.

(d) *Monitoring and compliance*—(1) *Systems required to monitor quarterly.* To comply with subpart V MCLs in §141.64(b)(2), you must calculate LRAAs for TTHM and HAA5 using monitoring results collected under this subpart and determine that each LRAA does not exceed the MCL. If you fail to complete four consecutive quarters of monitoring, you must calculate compliance with the MCL based on the average of the available data from the most recent four quarters. If you take more than one sample per quarter at a monitoring location, you must average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.

(2) *Systems required to monitor yearly or less frequently.* To determine compliance with subpart V MCLs in §141.64(b)(2), you must determine that each sample taken is less than the MCL. If any sample exceeds the MCL, you must comply with the requirements of §141.625. If no sample exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.

(e) *Violation.* You are in violation of the monitoring requirements for each quarter that a monitoring result would

be used in calculating an LRAA if you fail to monitor.

[71 FR 488, Jan. 4, 2006; 71 FR 4645, Jan. 27, 2006]

§ 141.621 Routine monitoring.

(a) *Monitoring.* (1) If you submitted an IDSE report, you must begin monitoring at the locations and months you have recommended in your IDSE report submitted under § 141.605 following the schedule in § 141.620(c), unless the State requires other locations or additional locations after its review. If you submitted a 40/30 certification under § 141.603 or you qualified for a very small system waiver under § 141.604 or you are a nontransient noncommunity water system serving <10,000, you must monitor at the location(s) and dates identified in your monitoring plan in § 141.132(f), updated as required by § 141.622.

(2) You must monitor at no fewer than the number of locations identified in this paragraph (a)(2).

Source water type	Population size category	Monitoring Frequency [1]	Distribution system monitoring location total per monitoring period [2]
Subpart H:			
	<500	per year	2
	500–3,300	per quarter	2
	3,301–9,999	per quarter	2
	10,000–49,999	per quarter	4
	50,000–249,999	per quarter	8
	250,000–999,999	per quarter	12
	1,000,000–4,999,999	per quarter	16
	≥5,000,000	per quarter	20
Ground Water:			
	<500	per year	2
	500–9,999	per year	2
	10,000–99,999	per quarter	4
	100,000–499,999	per quarter	6
	≥500,000	per quarter	8

[1] All systems must monitor during month of highest DBP concentrations.
[2] Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500–3,300. Ground water systems serving 500–9,999 on annual monitoring must take dual sample sets at each monitoring location. All other systems on annual monitoring and subpart H systems serving 500–3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For systems serving fewer than 500 people, only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month.

(3) If you are an undisinfected system that begins using a disinfectant other than UV light after the dates in subpart U of this part for complying with the Initial Distribution System Evaluation requirements, you must consult with the State to identify compliance monitoring locations for this subpart. You must then develop a monitoring plan under § 141.622 that includes those monitoring locations.

(b) *Analytical methods.* You must use an approved method listed in § 141.131 for TTHM and HAA5 analyses in this subpart. Analyses must be conducted by laboratories that have received certification by EPA or the State as specified in § 141.131.

[71 FR 488, Jan. 4, 2006, as amended at 74 FR 30958, June 29, 2009]

§ 141.622 Subpart V monitoring plan.

(a)(1) You must develop and implement a monitoring plan to be kept on file for State and public review. The monitoring plan must contain the elements in paragraphs (a)(1)(i) through (a)(1)(iv) of this section and be complete no later than the date you conduct your initial monitoring under this subpart.

(i) Monitoring locations;

(ii) Monitoring dates;

(iii) Compliance calculation procedures; and

(iv) Monitoring plans for any other systems in the combined distribution system if the State has reduced monitoring requirements under the State authority in § 142.16(m).

(2) If you were not required to submit an IDSE report under either § 141.601 or

§ 141.602, and you do not have sufficient subpart L monitoring locations to identify the required number of subpart V compliance monitoring locations indicated in § 141.605(b), you must identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified. You must also provide the rationale for identifying the locations as having high levels of TTHM or HAA5. If you have more subpart L monitoring locations than required for subpart V compliance monitoring in § 141.605(b), you must identify which locations you will use for subpart V compliance monitoring by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of subpart V compliance monitoring locations have been identified.

(b) If you are a subpart H system serving >3,300 people, you must submit a copy of your monitoring plan to the State prior to the date you conduct your initial monitoring under this subpart, unless your IDSE report submitted under subpart U of this part contains all the information required by this section.

(c) You may revise your monitoring plan to reflect changes in treatment, distribution system operations and layout (including new service areas), or other factors that may affect TTHM or HAA5 formation, or for State-approved reasons, after consultation with the State regarding the need for changes and the appropriateness of changes. If you change monitoring locations, you must replace existing compliance monitoring locations with the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels. The State may also require modifications in your monitoring plan. If you are a subpart H system serving >3,300 people, you must submit a copy of your modified monitoring plan to the State prior to the date you are required to comply with the revised monitoring plan.

§ 141.623 Reduced monitoring.

(a) You may reduce monitoring to the level specified in the table in this paragraph (a) any time the LRAA is ≤0.040 mg/L for TTHM and ≤0.030 mg/L for HAA5 at all monitoring locations. You may only use data collected under the provisions of this subpart or subpart L of this part to qualify for reduced monitoring. In addition, the source water annual average TOC level, before any treatment, must be ≤4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either § 141.132(b)(1)(iii) or § 141.132(d).

Source water type	Population size category	Monitoring frequency [1]	Distribution system monitoring location per monitoring period
Subpart H:			
	<500	.....	monitoring may not be reduced.
	500–3,300	per year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	3,301–9,999	per year	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.
	10,000–49,999	per quarter	2 dual sample sets at the locations with the highest TTHM and highest HAA5 LRAAs.
	50,000–249,999	per quarter	4 dual sample sets—at the locations with the two highest TTHM and two highest HAA5 LRAAs.
	250,000–999,999	per quarter	6 dual sample sets—at the locations with the three highest TTHM and three highest HAA5 LRAAs.

Source water type	Population size category	Monitoring frequency [1]	Distribution system monitoring location per monitoring period
	1,000,000–4,999,999	per quarter	8 dual sample sets—at the locations with the four highest TTHM and four highest HAA5 LRAAs.
	≥5,000,000	per quarter	10 dual sample sets—at the locations with the five highest TTHM and five highest HAA5 LRAAs.
Ground Water:			
	<500	every third year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	500–9,999	per year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	10,000–99,999	per year	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.
	100,000–499,999	per quarter	2 dual sample sets; at the locations with the highest TTHM and highest HAA5 LRAAs.
	≥500,000	per quarter	4 dual sample sets at the locations with the two highest TTHM and two highest HAA5 LRAAs.

[1] Systems on quarterly monitoring must take dual sample sets every 90 days.

(b) You may remain on reduced monitoring as long as the TTHM LRAA ≤0.040 mg/L and the HAA5 LRAA ≤0.030 mg/L at each monitoring location (for systems with quarterly reduced monitoring) or each TTHM sample ≤0.060 mg/L and each HAA5 sample ≤0.045 mg/L (for systems with annual or less frequent monitoring). In addition, the source water annual average TOC level, before any treatment, must be ≤4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either §141.132(b)(1)(iii) or §141.132(d).

(c) If the LRAA based on quarterly monitoring at any monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 or if the annual (or less frequent) sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5, or if the source water annual average TOC level, before any treatment, >4.0 mg/L at any treatment plant treating surface water or ground water under the direct influence of surface water, you must resume routine monitoring under §141.621 or begin increased monitoring if §141.625 applies.

(d) The State may return your system to routine monitoring at the State's discretion.

§ 141.624 Additional requirements for consecutive systems.

If you are a consecutive system that does not add a disinfectant but delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, you must comply with analytical and monitoring requirements for chlorine and chloramines in §141.131 (c) and §141.132(c)(1) and the compliance requirements in §141.133(c)(1) beginning April 1, 2009, unless required earlier by the State, and report monitoring results under §141.134(c).

§ 141.625 Conditions requiring increased monitoring.

(a) If you are required to monitor at a particular location annually or less frequently than annually under §141.621

or §141.623, you must increase monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if a TTHM sample is >0.080 mg/L or a HAA5 sample is >0.060 mg/L at any location.

(b) You are in violation of the MCL when the LRAA exceeds the subpart V MCLs in §141.64(b)(2), calculated based on four consecutive quarters of monitoring (or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters). You are in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if you fail to monitor.

(c) You may return to routine monitoring once you have conducted increased monitoring for at least four consecutive quarters and the LRAA for every monitoring location is ≤0.060 mg/L for TTHM and ≤0.045 mg/L for HAA5.

§141.626 Operational evaluation levels.

(a) You have exceeded the operational evaluation level at any monitoring location where the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average, exceeds 0.080 mg/L, or where the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average, exceeds 0.060 mg/L.

(b)(1) If you exceed the operational evaluation level, you must conduct an operational evaluation and submit a written report of the evaluation to the State no later than 90 days after being notified of the analytical result that causes you to exceed the operational evaluation level. The written report must be made available to the public upon request.

(2) Your operational evaluation must include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedences.

(i) You may request and the State may allow you to limit the scope of your evaluation if you are able to identify the cause of the operational evaluation level exceedance.

(ii) Your request to limit the scope of the evaluation does not extend the schedule in paragraph (b)(1) of this section for submitting the written report. The State must approve this limited scope of evaluation in writing and you must keep that approval with the completed report.

§141.627 Requirements for remaining on reduced TTHM and HAA5 monitoring based on subpart L results.

You may remain on reduced monitoring after the dates identified in §141.620(c) for compliance with this subpart only if you qualify for a 40/30 certification under §141.603 or have received a very small system waiver under §141.604, plus you meet the reduced monitoring criteria in §141.623(a), and you do not change or add monitoring locations from those used for compliance monitoring under subpart L of this part. If your monitoring locations under this subpart differ from your monitoring locations under subpart L of this part, you may not remain on reduced monitoring after the dates identified in §141.620(c) for compliance with this subpart.

§141.628 Requirements for remaining on increased TTHM and HAA5 monitoring based on subpart L results.

If you were on increased monitoring under §141.132(b)(1), you must remain on increased monitoring until you qualify for a return to routine monitoring under §141.625(c). You must conduct increased monitoring under §141.625 at the monitoring locations in the monitoring plan developed under §141.622 beginning at the date identified in §141.620(c) for compliance with this subpart and remain on increased monitoring until you qualify for a return to routine monitoring under §141.625(c).

§ 141.629 Reporting and recordkeeping requirements.

(a) *Reporting.* (1) You must report the following information for each monitoring location to the State within 10 days of the end of any quarter in which monitoring is required:

(i) Number of samples taken during the last quarter.

(ii) Date and results of each sample taken during the last quarter.

(iii) Arithmetic average of quarterly results for the last four quarters for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter. If the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, you must report this information to the State as part of the first report due following the compliance date or anytime thereafter that this determination is made. If you are required to conduct monitoring at a frequency that is less than quarterly, you must make compliance calculations beginning with the first compliance sample taken after the compliance date, unless you are required to conduct increased monitoring under § 141.625.

(iv) Whether, based on § 141.64(b)(2) and this subpart, the MCL was violated at any monitoring location.

(v) Any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.

(2) If you are a subpart H system seeking to qualify for or remain on reduced TTHM/HAA5 monitoring, you must report the following source water TOC information for each treatment plant that treats surface water or ground water under the direct influence of surface water to the State within 10 days of the end of any quarter in which monitoring is required:

(i) The number of source water TOC samples taken each month during last quarter.

(ii) The date and result of each sample taken during last quarter.

(iii) The quarterly average of monthly samples taken during last quarter or the result of the quarterly sample.

(iv) The running annual average (RAA) of quarterly averages from the past four quarters.

(v) Whether the RAA exceeded 4.0 mg/L.

(3) The State may choose to perform calculations and determine whether the MCL was exceeded or the system is eligible for reduced monitoring in lieu of having the system report that information

(b) *Recordkeeping.* You must retain any subpart V monitoring plans and your subpart V monitoring results as required by § 141.33.

Subpart W—Enhanced Treatment for *Cryptosporidium*

SOURCE: 71 FR 769, Jan. 5, 2006, unless otherwise noted.

GENERAL REQUIREMENTS

§ 141.700 General requirements.

(a) The requirements of this subpart W are national primary drinking water regulations. The regulations in this subpart establish or extend treatment technique requirements in lieu of maximum contaminant levels for *Cryptosporidium.* These requirements are in addition to requirements for filtration and disinfection in subparts H, P, and T of this part.

(b) *Applicability.* The requirements of this subpart apply to all subpart H systems, which are public water systems supplied by a surface water source and public water systems supplied by a ground water source under the direct influence of surface water.

(1) Wholesale systems, as defined in § 141.2, must comply with the requirements of this subpart based on the population of the largest system in the combined distribution system.

(2) The requirements of this subpart for filtered systems apply to systems required by National Primary Drinking Water Regulations to provide filtration treatment, whether or not the system is currently operating a filtration system.

(3) The requirements of this subpart for unfiltered systems apply only to unfiltered systems that timely met and

continue to meet the filtration avoidance criteria in subparts H, P, and T of this part, as applicable.

(c) *Requirements.* Systems subject to this subpart must comply with the following requirements:

(1) Systems must conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source. This monitoring may include sampling for *Cryptosporidium, E. coli,* and turbidity as described in §§141.701 through 141.706, to determine what level, if any, of additional *Cryptosporidium* treatment they must provide.

(2) Systems that plan to make a significant change to their disinfection practice must develop disinfection profiles and calculate disinfection benchmarks, as described in §§141.708 through 141.709.

(3) Filtered systems must determine their *Cryptosporidium* treatment bin classification as described in §141.710 and provide additional treatment for *Cryptosporidium,* if required, as described in §141.711. All unfiltered systems must provide treatment for *Cryptosporidium* as described in §141.712. Filtered and unfiltered systems must implement *Cryptosporidium* treatment according to the schedule in §141.713.

(4) Systems with uncovered finished water storage facilities must comply with the requirements to cover the facility or treat the discharge from the facility as described in §141.714.

(5) Systems required to provide additional treatment for *Cryptosporidium* must implement microbial toolbox options that are designed and operated as described in §§141.715 through 141.720.

(6) Systems must comply with the applicable recordkeeping and reporting requirements described in §§141.721 through 141.722.

(7) Systems must address significant deficiencies identified in sanitary surveys performed by EPA as described in §141.723.

SOURCE WATER MONITORING REQUIREMENTS

§ 141.701 Source water monitoring.

(a) *Initial round of source water monitoring.* Systems must conduct the following monitoring on the schedule in paragraph (c) of this section unless they meet the monitoring exemption criteria in paragraph (d) of this section.

(1) Filtered systems serving at least 10,000 people must sample their source water for *Cryptosporidium, E. coli,* and turbidity at least monthly for 24 months.

(2) Unfiltered systems serving at least 10,000 people must sample their source water for *Cryptosporidium* at least monthly for 24 months.

(3)(i) Filtered systems serving fewer than 10,000 people must sample their source water for *E. coli* at least once every two weeks for 12 months.

(ii) A filtered system serving fewer than 10,000 people may avoid *E. coli* monitoring if the system notifies the State that it will monitor for *Cryptosporidium* as described in paragraph (a)(4) of this section. The system must notify the State no later than 3 months prior to the date the system is otherwise required to start *E. coli* monitoring under §141.701(c).

(4) Filtered systems serving fewer than 10,000 people must sample their source water for *Cryptosporidium* at least twice per month for 12 months or at least monthly for 24 months if they meet one of the following, based on monitoring conducted under paragraph (a)(3) of this section:

(i) For systems using lake/reservoir sources, the annual mean *E. coli* concentration is greater than 10 *E. coli*/100 mL.

(ii) For systems using flowing stream sources, the annual mean *E. coli* concentration is greater than 50 *E. coli*/100 mL.

(iii) The system does not conduct *E. coli* monitoring as described in paragraph (a)(3) of this section.

(iv) Systems using ground water under the direct influence of surface water (GWUDI) must comply with the requirements of paragraph (a)(4) of this section based on the *E. coli* level that applies to the nearest surface water body. If no surface water body is nearby, the system must comply based on the requirements that apply to systems using lake/reservoir sources.

(5) For filtered systems serving fewer than 10,000 people, the State may approve monitoring for an indicator

other than *E. coli* under paragraph (a)(3) of this section. The State also may approve an alternative to the *E. coli* concentration in paragraph (a)(4)(i), (ii) or (iv) of this section to trigger *Cryptosporidium* monitoring. This approval by the State must be provided to the system in writing and must include the basis for the State's determination that the alternative indicator and/or trigger level will provide a more accurate identification of whether a system will exceed the Bin 1 *Cryptosporidium* level in § 141.710.

(6) Unfiltered systems serving fewer than 10,000 people must sample their source water for *Cryptosporidium* at least twice per month for 12 months or at least monthly for 24 months.

(7) Systems may sample more frequently than required under this section if the sampling frequency is evenly spaced throughout the monitoring period.

(b) *Second round of source water monitoring.* Systems must conduct a second round of source water monitoring that meets the requirements for monitoring parameters, frequency, and duration described in paragraph (a) of this section, unless they meet the monitoring exemption criteria in paragraph (d) of this section. Systems must conduct this monitoring on the schedule in paragraph (c) of this section.

(c) *Monitoring schedule.* Systems must begin the monitoring required in paragraphs (a) and (b) of this section no later than the month beginning with the date listed in this table:

SOURCE WATER MONITORING STARTING DATES TABLE

Systems that serve . . .	Must begin the first round of source water monitoring no later than the month beginning . . .	And must begin the second round of source water monitoring no later than the month beginning . . .
(1) At least 100,000 people	(i) October 1, 2006	(ii) April 1, 2015.
(2) From 50,000 to 99,999 people	(i) April 1, 2007	(ii) October 1, 2015.
(3) From 10,000 to 49,999 people	(i) April 1, 2008	(ii) October 1, 2016.
(4) Fewer than 10,000 and monitor for *E. coli*[a].	(i) October 1, 2008	(ii) October 1, 2017.
(5) Fewer than 10,000 and monitor for *Cryptosporidium*[b].	(i) April 1, 2010	(ii) April 1, 2019.

[a] Applies only to filtered systems.
[b] Applies to filtered systems that meet the conditions of paragraph (a)(4) of this section and unfiltered systems.

(d) *Monitoring avoidance.* (1) Filtered systems are not required to conduct source water monitoring under this subpart if the system will provide a total of at least 5.5-log of treatment for *Cryptosporidium*, equivalent to meeting the treatment requirements of Bin 4 in § 141.711.

(2) Unfiltered systems are not required to conduct source water monitoring under this subpart if the system will provide a total of at least 3-log *Cryptosporidium* inactivation, equivalent to meeting the treatment requirements for unfiltered systems with a mean *Cryptosporidium* concentration of greater than 0.01 oocysts/L in § 141.712.

(3) If a system chooses to provide the level of treatment in paragraph (d)(1) or (2) of this section, as applicable, rather than start source water monitoring, the system must notify the State in writing no later than the date the system is otherwise required to submit a sampling schedule for monitoring under § 141.702. Alternatively, a system may choose to stop sampling at any point after it has initiated monitoring if it notifies the State in writing that it will provide this level of treatment. Systems must install and operate technologies to provide this level of treatment by the applicable treatment compliance date in § 141.713.

(e) *Plants operating only part of the year.* Systems with subpart H plants that operate for only part of the year must conduct source water monitoring in accordance with this subpart, but with the following modifications:

(1) Systems must sample their source water only during the months that the plant operates unless the State specifies another monitoring period based on plant operating practices.

(2) Systems with plants that operate less than six months per year and that

monitor for *Cryptosporidium* must collect at least six *Cryptosporidium* samples per year during each of two years of monitoring. Samples must be evenly spaced throughout the period the plant operates.

(f)(1) *New sources.* A system that begins using a new source of surface water or GWUDI after the system is required to begin monitoring under paragraph (c) of this section must monitor the new source on a schedule the State approves. Source water monitoring must meet the requirements of this subpart. The system must also meet the bin classification and *Cryptosporidium* treatment requirements of §§141.710 and 141.711 or §141.712, as applicable, for the new source on a schedule the State approves.

(2) The requirements of §141.701(f) apply to subpart H systems that begin operation after the monitoring start date applicable to the system's size under paragraph (c) of this section.

(3) The system must begin a second round of source water monitoring no later than 6 years following initial bin classification under §141.710 or determination of the mean *Cryptosporidium* level under §141.712, as applicable.

(g) Failure to collect any source water sample required under this section in accordance with the sampling schedule, sampling location, analytical method, approved laboratory, and reporting requirements of §§141.702 through 141.706 is a monitoring violation.

(h) *Grandfathering monitoring data.* Systems may use (grandfather) monitoring data collected prior to the applicable monitoring start date in paragraph (c) of this section to meet the initial source water monitoring requirements in paragraph (a) of this section. Grandfathered data may substitute for an equivalent number of months at the end of the monitoring period. All data submitted under this paragraph must meet the requirements in §141.707.

§141.702 Sampling schedules.

(a) Systems required to conduct source water monitoring under §141.701 must submit a sampling schedule that specifies the calendar dates when the system will collect each required sample.

(1) Systems must submit sampling schedules no later than 3 months prior to the applicable date listed in §141.701(c) for each round of required monitoring.

(2)(i) Systems serving at least 10,000 people must submit their sampling schedule for the initial round of source water monitoring under §141.701(a) to EPA electronically at *https://intranet.epa.gov/lt2/.*

(ii) If a system is unable to submit the sampling schedule electronically, the system may use an alternative approach for submitting the sampling schedule that EPA approves.

(3) Systems serving fewer than 10,000 people must submit their sampling schedules for the initial round of source water monitoring §141.701(a) to the State.

(4) Systems must submit sampling schedules for the second round of source water monitoring §141.701(b) to the State.

(5) If EPA or the State does not respond to a system regarding its sampling schedule, the system must sample at the reported schedule.

(b) Systems must collect samples within two days before or two days after the dates indicated in their sampling schedule (*i.e.*, within a five-day period around the schedule date) unless one of the conditions of paragraph (b)(1) or (2) of this section applies.

(1) If an extreme condition or situation exists that may pose danger to the sample collector, or that cannot be avoided and causes the system to be unable to sample in the scheduled five-day period, the system must sample as close to the scheduled date as is feasible unless the State approves an alternative sampling date. The system must submit an explanation for the delayed sampling date to the State concurrent with the shipment of the sample to the laboratory.

(2)(i) If a system is unable to report a valid analytical result for a scheduled sampling date due to equipment failure, loss of or damage to the sample, failure to comply with the analytical method requirements, including the quality control requirements in §141.704, or the failure of an approved

laboratory to analyze the sample, then the system must collect a replacement sample.

(ii) The system must collect the replacement sample not later than 21 days after receiving information that an analytical result cannot be reported for the scheduled date unless the system demonstrates that collecting a replacement sample within this time frame is not feasible or the State approves an alternative resampling date. The system must submit an explanation for the delayed sampling date to the State concurrent with the shipment of the sample to the laboratory.

(c) Systems that fail to meet the criteria of paragraph (b) of this section for any source water sample required under §141.701 must revise their sampling schedules to add dates for collecting all missed samples. Systems must submit the revised schedule to the State for approval prior to when the system begins collecting the missed samples.

§ 141.703 Sampling locations.

(a) Systems required to conduct source water monitoring under §141.701 must collect samples for each plant that treats a surface water or GWUDI source. Where multiple plants draw water from the same influent, such as the same pipe or intake, the State may approve one set of monitoring results to be used to satisfy the requirements of §141.701 for all plants.

(b)(1) Systems must collect source water samples prior to chemical treatment, such as coagulants, oxidants and disinfectants, unless the system meets the condition of paragraph (b)(2) of this section.

(2) The State may approve a system to collect a source water sample after chemical treatment. To grant this approval, the State must determine that collecting a sample prior to chemical treatment is not feasible for the system and that the chemical treatment is unlikely to have a significant adverse effect on the analysis of the sample.

(c) Systems that recycle filter backwash water must collect source water samples prior to the point of filter backwash water addition.

(d) *Bank filtration.* (1) Systems that receive *Cryptosporidium* treatment credit for bank filtration under §141.173(b) or §141.552(a), as applicable, must collect source water samples in the surface water prior to bank filtration.

(2) Systems that use bank filtration as pretreatment to a filtration plant must collect source water samples from the well (*i.e.*, after bank filtration). Use of bank filtration during monitoring must be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive treatment credit for the bank filtration under §141.717(c).

(e) *Multiple sources.* Systems with plants that use multiple water sources, including multiple surface water sources and blended surface water and ground water sources, must collect samples as specified in paragraph (e)(1) or (2) of this section. The use of multiple sources during monitoring must be consistent with routine operational practice.

(1) If a sampling tap is available where the sources are combined prior to treatment, systems must collect samples from the tap.

(2) If a sampling tap where the sources are combined prior to treatment is not available, systems must collect samples at each source near the intake on the same day and must follow either paragraph (e)(2)(i) or (ii) of this section for sample analysis.

(i) Systems may composite samples from each source into one sample prior to analysis. The volume of sample from each source must be weighted according to the proportion of the source in the total plant flow at the time the sample is collected.

(ii) Systems may analyze samples from each source separately and calculate a weighted average of the analysis results for each sampling date. The weighted average must be calculated by multiplying the analysis result for each source by the fraction the source contributed to total plant flow at the time the sample was collected and then summing these values.

(f) *Additional Requirements.* Systems must submit a description of their sampling location(s) to the State at

the same time as the sampling schedule required under §141.702. This description must address the position of the sampling location in relation to the system's water source(s) and treatment processes, including pretreatment, points of chemical treatment, and filter backwash recycle. If the State does not respond to a system regarding sampling location(s), the system must sample at the reported location(s).

§141.704 Analytical methods.

(a) *Cryptosporidium.* Systems must analyze for *Cryptosporidium* using *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,* 2005, United States Environmental Protection Agency, EPA–815–R–05–002 or *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,* 2005, United States Environmental Protection Agency, EPA–815–R–05–001, which are incorporated by reference, or alternative methods listed in appendix A to subpart C of this part. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of these methods online from *http://www.epa.gov/safewater/disinfection/lt2* or from the United States Environmental Protection Agency, Office of Ground Water and Drinking Water, 1201 Constitution Ave., NW., Washington, DC 20460 (*Telephone:* 800–426–4791). You may inspect a copy at the Water Docket in the EPA Docket Center, 1301 Constitution Ave., NW., Washington, DC (*Telephone:* 202–566–2426) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(1) Systems must analyze at least a 10 L sample or a packed pellet volume of at least 2 mL as generated by the methods listed in paragraph (a) of this section. Systems unable to process a 10 L sample must analyze as much sample volume as can be filtered by two filters approved by EPA for the methods listed in paragraph (a) of this section, up to a packed pellet volume of at least 2 mL.

(2)(i) Matrix spike (MS) samples, as required by the methods in paragraph (a) of this section, must be spiked and filtered by a laboratory approved for *Cryptosporidium* analysis under §141.705.

(ii) If the volume of the MS sample is greater than 10 L, the system may filter all but 10 L of the MS sample in the field, and ship the filtered sample and the remaining 10 L of source water to the laboratory. In this case, the laboratory must spike the remaining 10 L of water and filter it through the filter used to collect the balance of the sample in the field.

(3) Flow cytometer-counted spiking suspensions must be used for MS samples and ongoing precision and recovery (OPR) samples.

(b) *E. coli.* System must use methods for enumeration of E. coli in source water approved in §136.3(a) of this chapter or alternative methods listed in appendix A to subpart C of this part.

(1) The time from sample collection to initiation of analysis may not exceed 30 hours unless the system meets the condition of paragraph (b)(2) of this section.

(2) The State may approve on a case-by-case basis the holding of an *E. coli* sample for up to 48 hours between sample collection and initiation of analysis if the State determines that analyzing an *E. coli* sample within 30 hours is not feasible. *E. coli* samples held between 30 to 48 hours must be analyzed by the Colilert reagent version of Standard Method 9223B as listed in §136.3(a) of this title.

(3) Systems must maintain samples between 0 °C and 10 °C during storage and transit to the laboratory.

(c) *Turbidity.* Systems must use methods for turbidity measurement approved in §141.74(a)(1).

[71 FR 769, Jan. 5, 2006, as amended at 74 FR 30959, June 29, 2009]

§141.705 Approved laboratories.

(a) *Cryptosporidium.* Systems must have *Cryptosporidium* samples analyzed by a laboratory that is approved under EPA's Laboratory Quality Assurance Evaluation Program for Analysis of *Cryptosporidium* in Water or a laboratory that has been certified for

Cryptosporidium analysis by an equivalent State laboratory certification program.

(b) *E. coli.* Any laboratory certified by the EPA, the National Environmental Laboratory Accreditation Conference or the State for total coliform or fecal coliform analysis under § 141.74 is approved for *E. coli* analysis under this subpart when the laboratory uses the same technique for *E. coli* that the laboratory uses for § 141.74.

(c) *Turbidity.* Measurements of turbidity must be made by a party approved by the State.

§ 141.706 Reporting source water monitoring results.

(a) Systems must report results from the source water monitoring required under § 141.701 no later than 10 days after the end of the first month following the month when the sample is collected.

(b)(1) All systems serving at least 10,000 people must report the results from the initial source water monitoring required under § 141.701(a) to EPA electronically at *https://intranet.epa.gov/lt2/.*

(2) If a system is unable to report monitoring results electronically, the system may use an alternative approach for reporting monitoring results that EPA approves.

(c) Systems serving fewer than 10,000 people must report results from the initial source water monitoring required under § 141.701(a) to the State.

(d) All systems must report results from the second round of source water monitoring required under § 141.701(b) to the State.

(e) Systems must report the applicable information in paragraphs (e)(1) and (2) of this section for the source water monitoring required under § 141.701.

(1) Systems must report the following data elements for each *Cryptosporidium* analysis:

Data element.
1. PWS ID.
2. Facility ID.
3. Sample collection date.
4. Sample type (field or matrix spike).
5. Sample volume filtered (L), to nearest ¼ L.
6. Was 100% of filtered volume examined.
7. Number of oocysts counted.

(i) For matrix spike samples, systems must also report the sample volume spiked and estimated number of oocysts spiked. These data are not required for field samples.

(ii) For samples in which less than 10 L is filtered or less than 100% of the sample volume is examined, systems must also report the number of filters used and the packed pellet volume.

(iii) For samples in which less than 100% of sample volume is examined, systems must also report the volume of resuspended concentrate and volume of this resuspension processed through immunomagnetic separation.

(2) Systems must report the following data elements for each *E. coli* analysis:

Data element.
1. PWS ID.
2. Facility ID.
3. Sample collection date.
4. Analytical method number.
5. Method type.
6. Source type (flowing stream, lake/reservoir, GWUDI).
7. *E. coli*/100 mL.
8. Turbidity.[1]

[1] Systems serving fewer than 10,000 people that are not required to monitor for turbidity under § 141.701 are not required to report turbidity with their *E. coli* results.

§ 141.707 Grandfathering previously collected data.

(a)(1) Systems may comply with the initial source water monitoring requirements of § 141.701(a) by grandfathering sample results collected before the system is required to begin monitoring (*i.e.*, previously collected data). To be grandfathered, the sample results and analysis must meet the criteria in this section and the State must approve.

(2) A filtered system may grandfather *Cryptosporidium* samples to meet the requirements of § 141.701(a) when the system does not have corresponding *E. coli* and turbidity samples. A system that grandfathers *Cryptosporidium* samples without *E. coli* and turbidity samples is not required to collect *E. coli* and turbidity samples when the system completes the requirements for *Cryptosporidium* monitoring under § 141.701(a).

(b) *E. coli sample analysis.* The analysis of *E. coli* samples must meet the

analytical method and approved laboratory requirements of §§141.704 through 141.705.

(c) *Cryptosporidium sample analysis.* The analysis of *Cryptosporidium* samples must meet the criteria in this paragraph.

(1) Laboratories analyzed *Cryptosporidium* samples using one of the analytical methods in paragraphs (c)(1)(i) through (vi) of this section, which are incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of these methods on-line from the United States Environmental Protection Agency, Office of Ground Water and Drinking Water, 1201 Constitution Ave, NW, Washington, DC 20460 (Telephone: 800–426–4791). You may inspect a copy at the Water Docket in the EPA Docket Center, 1301 Constitution Ave., NW, Washington, DC, (Telephone: 202–566–2426) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(i) *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,* 2005, United States Environmental Protection Agency, EPA–815–R–05–002.

(ii) *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,* 2005, United States Environmental Protection Agency, EPA–815–R–05–001.

(iii) *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,* 2001, United States Environmental Protection Agency, EPA–821–R–01–025.

(iv) *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,* 2001, United States Environmental Protection Agency, EPA–821–-R–01–026.

(v) *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,* 1999, United States Environmental Protection Agency, EPA–821–R–99–006.

(vi) *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,* 1999, United States Environmental Protection Agency, EPA–821–R–99–001.

(2) For each *Cryptosporidium* sample, the laboratory analyzed at least 10 L of sample or at least 2 mL of packed pellet or as much volume as could be filtered by 2 filters that EPA approved for the methods listed in paragraph (c)(1) of this section.

(d) *Sampling location.* The sampling location must meet the conditions in §141.703.

(e) *Sampling frequency. Cryptosporidium* samples were collected no less frequently than each calendar month on a regular schedule, beginning no earlier than January 1999. Sample collection intervals may vary for the conditions specified in §141.702(b)(1) and (2) if the system provides documentation of the condition when reporting monitoring results.

(1) The State may approve grandfathering of previously collected data where there are time gaps in the sampling frequency if the system conducts additional monitoring the State specifies to ensure that the data used to comply with the initial source water monitoring requirements of §141.701(a) are seasonally representative and unbiased.

(2) Systems may grandfather previously collected data where the sampling frequency within each month varied. If the *Cryptosporidium* sampling frequency varied, systems must follow the monthly averaging procedure in §141.710(b)(5) or §141.712(a)(3), as applicable, when calculating the bin classification for filtered systems or the mean *Cryptosporidium* concentration for unfiltered systems.

(f) *Reporting monitoring results for grandfathering.* Systems that request to grandfather previously collected monitoring results must report the following information by the applicable dates listed in this paragraph. Systems serving at least 10,000 people must report this information to EPA unless the State approves reporting to the State rather than EPA. Systems serving fewer than 10,000 people must report this information to the State.

(1) Systems must report that they intend to submit previously collected monitoring results for grandfathering. This report must specify the number of previously collected results the system will submit, the dates of the first and last sample, and whether a system will

conduct additional source water monitoring to meet the requirements of §141.701(a). Systems must report this information no later than the date the sampling schedule under §141.702 is required.

(2) Systems must report previously collected monitoring results for grandfathering, along with the associated documentation listed in paragraphs (f)(2)(i) through (iv) of this section, no later than two months after the applicable date listed in §141.701(c).

(i) For each sample result, systems must report the applicable data elements in §141.706.

(ii) Systems must certify that the reported monitoring results include all results the system generated during the time period beginning with the first reported result and ending with the final reported result. This applies to samples that were collected from the sampling location specified for source water monitoring under this subpart, not spiked, and analyzed using the laboratory's routine process for the analytical methods listed in this section.

(iii) Systems must certify that the samples were representative of a plant's source water(s) and the source water(s) have not changed. Systems must report a description of the sampling location(s), which must address the position of the sampling location in relation to the system's water source(s) and treatment processes, including points of chemical addition and filter backwash recycle.

(iv) For *Cryptosporidium* samples, the laboratory or laboratories that analyzed the samples must provide a letter certifying that the quality control criteria specified in the methods listed in paragraph (c)(1) of this section were met for each sample batch associated with the reported results. Alternatively, the laboratory may provide bench sheets and sample examination report forms for each field, matrix spike, IPR, OPR, and method blank sample associated with the reported results.

(g) If the State determines that a previously collected data set submitted for grandfathering was generated during source water conditions that were not normal for the system, such as a drought, the State may disapprove the data. Alternatively, the State may approve the previously collected data if the system reports additional source water monitoring data, as determined by the State, to ensure that the data set used under §141.710 or §141.712 represents average source water conditions for the system.

(h) If a system submits previously collected data that fully meet the number of samples required for initial source water monitoring under §141.701(a) and some of the data are rejected due to not meeting the requirements of this section, systems must conduct additional monitoring to replace rejected data on a schedule the State approves. Systems are not required to begin this additional monitoring until two months after notification that data have been rejected and additional monitoring is necessary.

Disinfection Profiling and Benchmarking Requirements

§ 141.708 Requirements when making a significant change in disinfection practice.

(a) Following the completion of initial source water monitoring under §141.701(a), a system that plans to make a significant change to its disinfection practice, as defined in paragraph (b) of this section, must develop disinfection profiles and calculate disinfection benchmarks for *Giardia lamblia* and viruses as described in §141.709. Prior to changing the disinfection practice, the system must notify the State and must include in this notice the information in paragraphs (a)(1) through (3) of this section.

(1) A completed disinfection profile and disinfection benchmark for *Giardia lamblia* and viruses as described in §141.709.

(2) A description of the proposed change in disinfection practice.

(3) An analysis of how the proposed change will affect the current level of disinfection.

(b) Significant changes to disinfection practice are defined as follows:

(1) Changes to the point of disinfection;

(2) Changes to the disinfectant(s) used in the treatment plant;

(3) Changes to the disinfection process; or

(4) Any other modification identified by the State as a significant change to disinfection practice.

§ 141.709 Developing the disinfection profile and benchmark.

(a) Systems required to develop disinfection profiles under § 141.708 must follow the requirements of this section. Systems must monitor at least weekly for a period of 12 consecutive months to determine the total log inactivation for *Giardia lamblia* and viruses. If systems monitor more frequently, the monitoring frequency must be evenly spaced. Systems that operate for fewer than 12 months per year must monitor weekly during the period of operation. Systems must determine log inactivation for *Giardia lamblia* through the entire plant, based on $CT_{99.9}$ values in Tables 1.1 through 1.6, 2.1 and 3.1 of § 141.74(b) as applicable. Systems must determine log inactivation for viruses through the entire treatment plant based on a protocol approved by the State.

(b) Systems with a single point of disinfectant application prior to the entrance to the distribution system must conduct the monitoring in paragraphs (b)(1) through (4) of this section. Systems with more than one point of disinfectant application must conduct the monitoring in paragraphs (b)(1) through (4) of this section for each disinfection segment. Systems must monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in § 141.74(a).

(1) For systems using a disinfectant other than UV, the temperature of the disinfected water must be measured at each residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the State.

(2) For systems using chlorine, the pH of the disinfected water must be measured at each chlorine residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the State.

(3) The disinfectant contact time(s) (t) must be determined during peak hourly flow.

(4) The residual disinfectant concentration(s) (C) of the water before or at the first customer and prior to each additional point of disinfectant application must be measured during peak hourly flow.

(c) In lieu of conducting new monitoring under paragraph (b) of this section, systems may elect to meet the requirements of paragraphs (c)(1) or (2) of this section.

(1) Systems that have at least one year of existing data that are substantially equivalent to data collected under the provisions of paragraph (b) of this section may use these data to develop disinfection profiles as specified in this section if the system has neither made a significant change to its treatment practice nor changed sources since the data were collected. Systems may develop disinfection profiles using up to three years of existing data.

(2) Systems may use disinfection profile(s) developed under § 141.172 or §§ 141.530 through 141.536 in lieu of developing a new profile if the system has neither made a significant change to its treatment practice nor changed sources since the profile was developed. Systems that have not developed a virus profile under § 141.172 or §§ 141.530 through 141.536 must develop a virus profile using the same monitoring data on which the *Giardia lamblia* profile is based.

(d) Systems must calculate the total inactivation ratio for *Giardia lamblia* as specified in paragraphs (d)(1) through (3) of this section.

(1) Systems using only one point of disinfectant application may determine the total inactivation ratio for the disinfection segment based on either of the methods in paragraph (d)(1)(i) or (ii) of this section.

(i) Determine one inactivation ratio ($CTcalc/CT_{99.9}$) before or at the first customer during peak hourly flow.

(ii) Determine successive $CTcalc/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. The system must calculate the total inactivation ratio by determining ($CTcalc/CT_{99.9}$) for each sequence and then adding the (CTcalc/

$CT_{99.9}$) values together to determine (Σ ($CTcalc/CT_{99.9}$)).

(2) Systems using more than one point of disinfectant application before the first customer must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The ($CTcalc/CT_{99.9}$) value of each segment and (Σ ($CTcalc/CT_{99.9}$)) must be calculated using the method in paragraph (d)(1)(ii) of this section.

(3) The system must determine the total logs of inactivation by multiplying the value calculated in paragraph (d)(1) or (d)(2) of this section by 3.0.

(4) Systems must calculate the log of inactivation for viruses using a protocol approved by the State.

(e) Systems must use the procedures specified in paragraphs (e)(1) and (2) of this section to calculate a disinfection benchmark.

(1) For each year of profiling data collected and calculated under paragraphs (a) through (d) of this section, systems must determine the lowest mean monthly level of both *Giardia lamblia* and virus inactivation. Systems must determine the mean *Giardia lamblia* and virus inactivation for each calendar month for each year of profiling data by dividing the sum of daily or weekly *Giardia lamblia* and virus log inactivation by the number of values calculated for that month.

(2) The disinfection benchmark is the lowest monthly mean value (for systems with one year of profiling data) or the mean of the lowest monthly mean values (for systems with more than one year of profiling data) of *Giardia lamblia* and virus log inactivation in each year of profiling data.

TREATMENT TECHNIQUE REQUIREMENTS

§ 141.710 Bin classification for filtered systems.

(a) Following completion of the initial round of source water monitoring required under § 141.701(a), filtered systems must calculate an initial *Cryptosporidium* bin concentration for each plant for which monitoring was required. Calculation of the bin concentration must use the *Cryptosporidium* results reported under § 141.701(a) and must follow the procedures in paragraphs (b)(1) through (5) of this section.

(b)(1) For systems that collect a total of at least 48 samples, the bin concentration is equal to the arithmetic mean of all sample concentrations.

(2) For systems that collect a total of at least 24 samples, but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which *Cryptosporidium* samples were collected.

(3) For systems that serve fewer than 10,000 people and monitor for *Cryptosporidium* for only one year (*i.e.*, collect 24 samples in 12 months), the bin concentration is equal to the arithmetic mean of all sample concentrations.

(4) For systems with plants operating only part of the year that monitor fewer than 12 months per year under § 141.701(e), the bin concentration is equal to the highest arithmetic mean of all sample concentrations during any year of *Cryptosporidium* monitoring.

(5) If the monthly *Cryptosporidium* sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification in paragraphs (b)(1) through (4) of this section.

(c) Filtered systems must determine their initial bin classification from the following table and using the *Cryptosporidium* bin concentration calculated under paragraphs (a)–(b) of this section:

BIN CLASSIFICATION TABLE FOR FILTERED SYSTEMS

For systems that are:	With a *Cryptosporidium* bin concentration of . . .[1]	The bin classification is . . .
. . . required to monitor for *Cryptosporidium* under § 141.701.	*Cryptosporidium* <0.075 oocyst/L	Bin 1.
	0.075 oocysts/L ≤*Cryptosporidium* <1.0 oocysts/L.	Bin 2.
	1.0 oocysts/L ≤*Cryptosporidium* <3.0 oocysts/L.	Bin 3.
	Cryptosporidium ≥3.0 oocysts/L	Bin 4.
. . . serving fewer than 10,000 people and NOT required to monitor for *Cryptosporidium* under § 141.701(a)(4).	NA	Bin 1.

[1] Based on calculations in paragraph (a) or (d) of this section, as applicable.

(d) Following completion of the second round of source water monitoring required under § 141.701(b), filtered systems must recalculate their *Cryptosporidium* bin concentration using the *Cryptosporidium* results reported under § 141.701(b) and following the procedures in paragraphs (b)(1) through (4) of this section. Systems must then redetermine their bin classification using this bin concentration and the table in paragraph (c) of this section.

(e)(1) Filtered systems must report their initial bin classification under paragraph (c) of this section to the State for approval no later than 6 months after the system is required to complete initial source water monitoring based on the schedule in § 141.701(c).

(2) Systems must report their bin classification under paragraph (d) of this section to the State for approval no later than 6 months after the system is required to complete the second round of source water monitoring based on the schedule in § 141.701(c).

(3) The bin classification report to the State must include a summary of source water monitoring data and the calculation procedure used to determine bin classification.

(f) Failure to comply with the conditions of paragraph (e) of this section is a violation of the treatment technique requirement.

§ 141.711 Filtered system additional *Cryptosporidium* treatment requirements.

(a) Filtered systems must provide the level of additional treatment for *Cryptosporidium* specified in this paragraph based on their bin classification as determined under § 141.710 and according to the schedule in § 141.713.

If the system bin classification is . . .	And the system uses the following filtration treatment in full compliance with subparts H, P, and T of this part (as applicable), then the additional *Cryptosporidium* treatment requirements are . . .			
	Conventional filtration treatment (including softening)	Direct filtration	Slow sand or diatomaceous earth filtration	Alternative filtration technologies
Bin 1	No additional treatment	No additional treatment	No additional treatment	No additional treatment.
Bin 2	1-log treatment	1.5-log treatment	1-log treatment	([1])
Bin 3	2-log treatment	2.5-log treatment	2-log treatment	([2])
Bin 4	2.5-log treatment	3-log treatment	2.5-log treatment	([3])

[1] As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 4.0-log.
[2] As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 5.0-log.
[3] As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 5.5-log.

(b)(1) Filtered systems must use one or more of the treatment and management options listed in § 141.715, termed the microbial toolbox, to comply with the additional *Cryptosporidium* treatment required in paragraph (a) of this section.

(2) Systems classified in Bin 3 and Bin 4 must achieve at least 1-log of the additional *Cryptosporidium* treatment required under paragraph (a) of this section using either one or a combination of the following: bag filters, bank

filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as described in §§ 141.716 through 141.720.

(c) Failure by a system in any month to achieve treatment credit by meeting criteria in §§ 141.716 through 141.720 for microbial toolbox options that is at least equal to the level of treatment required in paragraph (a) of this section is a violation of the treatment technique requirement.

(d) If the State determines during a sanitary survey or an equivalent source water assessment that after a system completed the monitoring conducted under § 141.701(a) or § 141.701(b), significant changes occurred in the system's watershed that could lead to increased contamination of the source water by *Cryptosporidium,* the system must take actions specified by the State to address the contamination. These actions may include additional source water monitoring and/or implementing microbial toolbox options listed in § 141.715.

§ 141.712 Unfiltered system *Cryptosporidium* treatment requirements.

(a) *Determination of mean Cryptosporidium level.* (1) Following completion of the initial source water monitoring required under § 141.701(a), unfiltered systems must calculate the arithmetic mean of all *Cryptosporidium* sample concentrations reported under § 141.701(a). Systems must report this value to the State for approval no later than 6 months after the month the system is required to complete initial source water monitoring based on the schedule in § 141.701(c).

(2) Following completion of the second round of source water monitoring required under § 141.701(b), unfiltered systems must calculate the arithmetic mean of all *Cryptosporidium* sample concentrations reported under § 141.701(b). Systems must report this value to the State for approval no later than 6 months after the month the system is required to complete the second round of source water monitoring based on the schedule in § 141.701(c).

(3) If the monthly *Cryptosporidium* sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the calculation of the mean *Cryptosporidium* level in paragraphs (a)(1) or (2) of this section.

(4) The report to the State of the mean *Cryptosporidium* levels calculated under paragraphs (a)(1) and (2) of this section must include a summary of the source water monitoring data used for the calculation.

(5) Failure to comply with the conditions of paragraph (a) of this section is a violation of the treatment technique requirement.

(b) *Cryptosporidium inactivation requirements.* Unfiltered systems must provide the level of inactivation for *Cryptosporidium* specified in this paragraph, based on their mean *Cryptosporidium* levels as determined under paragraph (a) of this section and according to the schedule in § 141.713.

(1) Unfiltered systems with a mean *Cryptosporidium* level of 0.01 oocysts/L or less must provide at least 2-log *Cryptosporidium* inactivation.

(2) Unfiltered systems with a mean *Cryptosporidium* level of greater than 0.01 oocysts/L must provide at least 3-log *Cryptosporidium* inactivation.

(c) *Inactivation treatment technology requirements.* Unfiltered systems must use chlorine dioxide, ozone, or UV as described in § 141.720 to meet the *Cryptosporidium* inactivation requirements of this section.

(1) Systems that use chlorine dioxide or ozone and fail to achieve the *Cryptosporidium* inactivation required in paragraph (b) of this section on more than one day in the calendar month are in violation of the treatment technique requirement.

(2) Systems that use UV light and fail to achieve the *Cryptosporidium* inactivation required in paragraph (b) of this section by meeting the criteria in § 141.720(d)(3)(ii) are in violation of the treatment technique requirement.

(d) *Use of two disinfectants.* Unfiltered systems must meet the combined *Cryptosporidium* inactivation requirements of this section and *Giardia lamblia* and virus inactivation requirements of § 141.72(a) using a minimum of two disinfectants, and each of two disinfectants must separately achieve the

total inactivation required for either *Cryptosporidium*, *Giardia lamblia*, or viruses.

§ 141.713 Schedule for compliance with *Cryptosporidium* treatment requirements.

(a) Following initial bin classification under §141.710(c), filtered systems must provide the level of treatment for *Cryptosporidium* required under §141.711 according to the schedule in paragraph (c) of this section.

(b) Following initial determination of the mean *Cryptosporidium* level under §141.712(a)(1), unfiltered systems must provide the level of treatment for *Cryptosporidium* required under §141.712 according to the schedule in paragraph (c) of this section.

(c) *Cryptosporidium treatment compliance dates.*

CRYPTOSPORIDIUM TREATMENT COMPLIANCE DATES TABLE

Systems that serve . . .	Must comply with Cryptosporidium treatment requirements no later than . . .[a]
(1) At least 100,000 people ...	(i) April 1, 2012.
(2) From 50,000 to 99,999 people.	(i) October 1, 2012.
(3) From 10,000 to 49,999 people.	(i) October 1, 2013.
(4) Fewer than 10,000 people	(i) October 1, 2014.

[a] States may allow up to an additional two years for complying with the treatment requirement for systems making capital improvements.

(d) If the bin classification for a filtered system changes following the second round of source water monitoring, as determined under §141.710(d), the system must provide the level of treatment for *Cryptosporidium* required under §141.711 on a schedule the State approves.

(e) If the mean *Cryptosporidium* level for an unfiltered system changes following the second round of monitoring, as determined under §141.712(a)(2), and if the system must provide a different level of *Cryptosporidium* treatment under §141.712 due to this change, the system must meet this treatment requirement on a schedule the State approves.

§ 141.714 Requirements for uncovered finished water storage facilities.

(a) Systems using uncovered finished water storage facilities must comply with the conditions of this section.

(b) Systems must notify the State of the use of each uncovered finished water storage facility no later than April 1, 2008.

(c) Systems must meet the conditions of paragraph (c)(1) or (2) of this section for each uncovered finished water storage facility or be in compliance with a State-approved schedule to meet these conditions no later than April 1, 2009.

(1) Systems must cover any uncovered finished water storage facility.

(2) Systems must treat the discharge from the uncovered finished water storage facility to the distribution system to achieve inactivation and/or removal of at least 4-log virus, 3-log *Giardia lamblia*, and 2-log *Cryptosporidium* using a protocol approved by the State.

(d) Failure to comply with the requirements of this section is a violation of the treatment technique requirement.

REQUIREMENTS FOR MICROBIAL TOOLBOX COMPONENTS

§ 141.715 Microbial toolbox options for meeting *Cryptosporidium* treatment requirements.

(a)(1) Systems receive the treatment credits listed in the table in paragraph (b) of this section by meeting the conditions for microbial toolbox options described in §§141.716 through 141.720. Systems apply these treatment credits to meet the treatment requirements in §141.711 or §141.712, as applicable.

(2) Unfiltered systems are eligible for treatment credits for the microbial toolbox options described in §141.720 only.

(b) The following table summarizes options in the microbial toolbox:

MICROBIAL TOOLBOX SUMMARY TABLE: OPTIONS, TREATMENT CREDITS AND CRITERIA

Toolbox Option	*Cryptosporidium* treatment credit with design and implementation criteria
Source Protection and Management Toolbox Options	
(1) Watershed control program	0.5-log credit for State-approved program comprising required elements, annual program status report to State, and regular watershed survey. Unfiltered systems are not eligible for credit. Specific criteria are in § 141.716(a).
(2) Alternative source/intake management	No prescribed credit. Systems may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies. Specific criteria are in § 141.716(b).
Pre Filtration Toolbox Options	
(3) Presedimentation basin with coagulation.	0.5-log credit during any month that presedimentation basins achieve a monthly mean reduction of 0.5-log or greater in turbidity or alternative State-approved performance criteria. To be eligible, basins must be operated continuously with coagulant addition and all plant flow must pass through basins. Specific criteria are in § 141.717(a).
(4) Two-stage lime softening	0.5-log credit for two-stage softening where chemical addition and hardness precipitation occur in both stages. All plant flow must pass through both stages. Single-stage softening is credited as equivalent to conventional treatment. Specific criteria are in § 141.717(b).
(5) Bank filtration	0.5-log credit for 25-foot setback; 1.0-log credit for 50-foot setback; aquifer must be unconsolidated sand containing at least 10 percent fines; average turbidity in wells must be less than 1 NTU. Systems using wells followed by filtration when conducting source water monitoring must sample the well to determine bin classification and are not eligible for additional credit. Specific criteria are in § 141.717(c).
Treatment Performance Toolbox Options	
(6) Combined filter performance	0.5-log credit for combined filter effluent turbidity less than or equal to 0.15 NTU in at least 95 percent of measurements each month. Specific criteria are in § 141.718(a).
(7) Individual filter performance	0.5-log credit (in addition to 0.5-log combined filter performance credit) if individual filter effluent turbidity is less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter and is never greater than 0.3 NTU in two consecutive measurements in any filter. Specific criteria are in § 141.718(b).
(8) Demonstration of performance	Credit awarded to unit process or treatment train based on a demonstration to the State with a State- approved protocol. Specific criteria are in § 141.718(c).
Additional Filtration Toolbox Options	
(9) Bag or cartridge filters (individual filters)	Up to 2-log credit based on the removal efficiency demonstrated during challenge testing with a 1.0-log factor of safety. Specific criteria are in § 141.719(a).
(10) Bag or cartridge filters (in series)	Up to 2.5-log credit based on the removal efficiency demonstrated during challenge testing with a 0.5-log factor of safety. Specific criteria are in § 141.719(a).
(11) Membrane filtration	Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing. Specific criteria are in § 141.719(b).
(12) Second stage filtration	0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation prior to first filter. Specific criteria are in § 141.719(c)
(13) Slow sand filters	2.5-log credit as a secondary filtration step; 3.0-log credit as a primary filtration process. No prior chlorination for either option. Specific criteria are in § 141.719(d).
Inactivation Toolbox Options	
(14) Chlorine dioxide	Log credit based on measured CT in relation to CT table. Specific criteria in § 141.720(b)
(15) Ozone	Log credit based on measured CT in relation to CT table. Specific criteria in § 141.720(b).
(16) UV	Log credit based on validated UV dose in relation to UV dose table; reactor validation testing required to establish UV dose and associated operating conditions. Specific criteria in § 141.720(d).

§ 141.716 Source toolbox components.

(a) *Watershed control program.* Systems receive 0.5-log *Cryptosporidium* treatment credit for implementing a watershed control program that meets the requirements of this section.

(1) Systems that intend to apply for the watershed control program credit must notify the State of this intent no

later than two years prior to the treatment compliance date applicable to the system in §141.713.

(2) Systems must submit to the State a proposed watershed control plan no later than one year before the applicable treatment compliance date in §141.713. The State must approve the watershed control plan for the system to receive watershed control program treatment credit. The watershed control plan must include the elements in paragraphs (a)(2)(i) through (iv) of this section.

(i) Identification of an ''area of influence'' outside of which the likelihood of *Cryptosporidium* or fecal contamination affecting the treatment plant intake is not significant. This is the area to be evaluated in future watershed surveys under paragraph (a)(5)(ii) of this section.

(ii) Identification of both potential and actual sources of *Cryptosporidium* contamination and an assessment of the relative impact of these sources on the system's source water quality.

(iii) An analysis of the effectiveness and feasibility of control measures that could reduce *Cryptosporidium* loading from sources of contamination to the system's source water.

(iv) A statement of goals and specific actions the system will undertake to reduce source water *Cryptosporidium* levels. The plan must explain how the actions are expected to contribute to specific goals, identify watershed partners and their roles, identify resource requirements and commitments, and include a schedule for plan implementation with deadlines for completing specific actions identified in the plan.

(3) Systems with existing watershed control programs (*i.e.*, programs in place on January 5, 2006) are eligible to seek this credit. Their watershed control plans must meet the criteria in paragraph (a)(2) of this section and must specify ongoing and future actions that will reduce source water *Cryptosporidium* levels.

(4) If the State does not respond to a system regarding approval of a watershed control plan submitted under this section and the system meets the other requirements of this section, the watershed control program will be considered approved and 0.5 log *Cryptosporidium* treatment credit will be awarded unless and until the State subsequently withdraws such approval.

(5) Systems must complete the actions in paragraphs (a)(5)(i) through (iii) of this section to maintain the 0.5-log credit.

(i) Submit an annual watershed control program status report to the State. The annual watershed control program status report must describe the system's implementation of the approved plan and assess the adequacy of the plan to meet its goals. It must explain how the system is addressing any shortcomings in plan implementation, including those previously identified by the State or as the result of the watershed survey conducted under paragraph (a)(5)(ii) of this section. It must also describe any significant changes that have occurred in the watershed since the last watershed sanitary survey. If a system determines during implementation that making a significant change to its approved watershed control program is necessary, the system must notify the State prior to making any such changes. If any change is likely to reduce the level of source water protection, the system must also list in its notification the actions the system will take to mitigate this effect.

(ii) Undergo a watershed sanitary survey every three years for community water systems and every five years for noncommunity water systems and submit the survey report to the State. The survey must be conducted according to State guidelines and by persons the State approves.

(A) The watershed sanitary survey must meet the following criteria: encompass the region identified in the State-approved watershed control plan as the area of influence; assess the implementation of actions to reduce source water *Cryptosporidium* levels; and identify any significant new sources of *Cryptosporidium.*

(B) If the State determines that significant changes may have occurred in the watershed since the previous watershed sanitary survey, systems must undergo another watershed sanitary survey by a date the State requires, which may be earlier than the regular

date in paragraph (a)(5)(ii) of this section.

(iii) The system must make the watershed control plan, annual status reports, and watershed sanitary survey reports available to the public upon request. These documents must be in a plain language style and include criteria by which to evaluate the success of the program in achieving plan goals. The State may approve systems to withhold from the public portions of the annual status report, watershed control plan, and watershed sanitary survey based on water supply security considerations.

(6) If the State determines that a system is not carrying out the approved watershed control plan, the State may withdraw the watershed control program treatment credit.

(b) *Alternative source.* (1) A system may conduct source water monitoring that reflects a different intake location (either in the same source or for an alternate source) or a different procedure for the timing or level of withdrawal from the source (alternative source monitoring). If the State approves, a system may determine its bin classification under §141.710 based on the alternative source monitoring results.

(2) If systems conduct alternative source monitoring under paragraph (b)(1) of this section, systems must also monitor their current plant intake concurrently as described in §141.701.

(3) Alternative source monitoring under paragraph (b)(1) of this section must meet the requirements for source monitoring to determine bin classification, as described in §§141.701 through 141.706. Systems must report the alternative source monitoring results to the State, along with supporting information documenting the operating conditions under which the samples were collected.

(4) If a system determines its bin classification under §141.710 using alternative source monitoring results that reflect a different intake location or a different procedure for managing the timing or level of withdrawal from the source, the system must relocate the intake or permanently adopt the withdrawal procedure, as applicable, no later than the applicable treatment compliance date in §141.713.

§141.717 Pre-filtration treatment toolbox components.

(a) *Presedimentation.* Systems receive 0.5-log *Cryptosporidium* treatment credit for a presedimentation basin during any month the process meets the criteria in this paragraph.

(1) The presedimentation basin must be in continuous operation and must treat the entire plant flow taken from a surface water or GWUDI source.

(2) The system must continuously add a coagulant to the presedimentation basin.

(3) The presedimentation basin must achieve the performance criteria in paragraph (3)(i) or (ii) of this section.

(i) Demonstrates at least 0.5-log mean reduction of influent turbidity. This reduction must be determined using daily turbidity measurements in the presedimentation process influent and effluent and must be calculated as follows: $\log_{10}$(monthly mean of daily influent turbidity) − $\log_{10}$(monthly mean of daily effluent turbidity).

(ii) Complies with State-approved performance criteria that demonstrate at least 0.5-log mean removal of micron-sized particulate material through the presedimentation process.

(b) *Two-stage lime softening.* Systems receive an additional 0.5-log *Cryptosporidium* treatment credit for a two-stage lime softening plant if chemical addition and hardness precipitation occur in two separate and sequential softening stages prior to filtration. Both softening stages must treat the entire plant flow taken from a surface water or GWUDI source.

(c) *Bank filtration.* Systems receive *Cryptosporidium* treatment credit for bank filtration that serves as pretreatment to a filtration plant by meeting the criteria in this paragraph. Systems using bank filtration when they begin source water monitoring under §141.701(a) must collect samples as described in §141.703(d) and are not eligible for this credit.

(1) Wells with a ground water flow path of at least 25 feet receive 0.5-log treatment credit; wells with a ground water flow path of at least 50 feet receive 1.0-log treatment credit. The ground water flow path must be determined as specified in paragraph (c)(4) of this section.

(2) Only wells in granular aquifers are eligible for treatment credit. Granular aquifers are those comprised of sand, clay, silt, rock fragments, pebbles or larger particles, and minor cement. A system must characterize the aquifer at the well site to determine aquifer properties. Systems must extract a core from the aquifer and demonstrate that in at least 90 percent of the core length, grains less than 1.0 mm in diameter constitute at least 10 percent of the core material.

(3) Only horizontal and vertical wells are eligible for treatment credit.

(4) For vertical wells, the ground water flow path is the measured distance from the edge of the surface water body under high flow conditions (determined by the 100 year floodplain elevation boundary or by the floodway, as defined in Federal Emergency Management Agency flood hazard maps) to the well screen. For horizontal wells, the ground water flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.

(5) Systems must monitor each wellhead for turbidity at least once every four hours while the bank filtration process is in operation. If monthly average turbidity levels, based on daily maximum values in the well, exceed 1 NTU, the system must report this result to the State and conduct an assessment within 30 days to determine the cause of the high turbidity levels in the well. If the State determines that microbial removal has been compromised, the State may revoke treatment credit until the system implements corrective actions approved by the State to remediate the problem.

(6) Springs and infiltration galleries are not eligible for treatment credit under this section, but are eligible for credit under §141.718(c).

(7) *Bank filtration demonstration of performance.* The State may approve *Cryptosporidium* treatment credit for bank filtration based on a demonstration of performance study that meets the criteria in this paragraph. This treatment credit may be greater than 1.0-log and may be awarded to bank filtration that does not meet the criteria in paragraphs (c)(1)–(5) of this section.

(i) The study must follow a State-approved protocol and must involve the collection of data on the removal of *Cryptosporidium* or a surrogate for *Cryptosporidium* and related hydrogeologic and water quality parameters during the full range of operating conditions.

(ii) The study must include sampling both from the production well(s) and from monitoring wells that are screened and located along the shortest flow path between the surface water source and the production well(s).

§141.718 Treatment performance toolbox components.

(a) *Combined filter performance.* Systems using conventional filtration treatment or direct filtration treatment receive an additional 0.5-log *Cryptosporidium* treatment credit during any month the system meets the criteria in this paragraph. Combined filter effluent (CFE) turbidity must be less than or equal to 0.15 NTU in at least 95 percent of the measurements. Turbidity must be measured as described in §141.74(a) and (c).

(b) *Individual filter performance.* Systems using conventional filtration treatment or direct filtration treatment receive 0.5-log *Cryptosporidium* treatment credit, which can be in addition to the 0.5-log credit under paragraph (a) of this section, during any month the system meets the criteria in this paragraph. Compliance with these criteria must be based on individual filter turbidity monitoring as described in §141.174 or §141.560, as applicable.

(1) The filtered water turbidity for each individual filter must be less than or equal to 0.15 NTU in at least 95 percent of the measurements recorded each month.

(2) No individual filter may have a measured turbidity greater than 0.3 NTU in two consecutive measurements taken 15 minutes apart.

(3) Any system that has received treatment credit for individual filter performance and fails to meet the requirements of paragraph (b)(1) or (2) of this section during any month does not receive a treatment technique violation under §141.711(c) if the State determines the following:

(i) The failure was due to unusual and short-term circumstances that could not reasonably be prevented through optimizing treatment plant design, operation, and maintenance.

(ii) The system has experienced no more than two such failures in any calendar year.

(c) *Demonstration of performance.* The State may approve *Cryptosporidium* treatment credit for drinking water treatment processes based on a demonstration of performance study that meets the criteria in this paragraph. This treatment credit may be greater than or less than the prescribed treatment credits in §141.711 or §§141.717 through 141.720 and may be awarded to treatment processes that do not meet the criteria for the prescribed credits.

(1) Systems cannot receive the prescribed treatment credit for any toolbox box option in §§141.717 through 141.720 if that toolbox option is included in a demonstration of performance study for which treatment credit is awarded under this paragraph.

(2) The demonstration of performance study must follow a State-approved protocol and must demonstrate the level of *Cryptosporidium* reduction the treatment process will achieve under the full range of expected operating conditions for the system.

(3) Approval by the State must be in writing and may include monitoring and treatment performance criteria that the system must demonstrate and report on an ongoing basis to remain eligible for the treatment credit. The State may designate such criteria where necessary to verify that the conditions under which the demonstration of performance credit was approved are maintained during routine operation.

§141.719 Additional filtration toolbox components.

(a) *Bag and cartridge filters.* Systems receive *Cryptosporidium* treatment credit of up to 2.0-log for individual bag or cartridge filters and up to 2.5-log for bag or cartridge filters operated in series by meeting the criteria in paragraphs (a)(1) through (10) of this section. To be eligible for this credit, systems must report the results of challenge testing that meets the requirements of paragraphs (a)(2) through (9) of this section to the State. The filters must treat the entire plant flow taken from a subpart H source.

(1) The *Cryptosporidium* treatment credit awarded to bag or cartridge filters must be based on the removal efficiency demonstrated during challenge testing that is conducted according to the criteria in paragraphs (a)(2) through (a)(9) of this section. A factor of safety equal to 1-log for individual bag or cartridge filters and 0.5-log for bag or cartridge filters in series must be applied to challenge testing results to determine removal credit. Systems may use results from challenge testing conducted prior to January 5, 2006 if the prior testing was consistent with the criteria specified in paragraphs (a)(2) through (9) of this section.

(2) Challenge testing must be performed on full-scale bag or cartridge filters, and the associated filter housing or pressure vessel, that are identical in material and construction to the filters and housings the system will use for removal of *Cryptosporidium.* Bag or cartridge filters must be challenge tested in the same configuration that the system will use, either as individual filters or as a series configuration of filters.

(3) Challenge testing must be conducted using *Cryptosporidium* or a surrogate that is removed no more efficiently than *Cryptosporidium.* The microorganism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate must be determined using a method capable of discreetly quantifying the specific microorganism or surrogate used in the test; gross measurements such as turbidity may not be used.

(4) The maximum feed water concentration that can be used during a challenge test must be based on the detection limit of the challenge particulate in the filtrate (*i.e.*, filtrate detection limit) and must be calculated using the following equation:

$$\text{Maximum Feed Concentration} = 1 \times 10^{4} \times (\text{Filtrate Detection Limit})$$

(5) Challenge testing must be conducted at the maximum design flow rate for the filter as specified by the manufacturer.

(6) Each filter evaluated must be tested for a duration sufficient to reach 100 percent of the terminal pressure drop, which establishes the maximum pressure drop under which the filter may be used to comply with the requirements of this subpart.

(7) Removal efficiency of a filter must be determined from the results of the challenge test and expressed in terms of log removal values using the following equation:

$$LRV = LOG_{10}(C_f) - LOG_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during challenge testing; C_f = the feed concentration measured during the challenge test; and C_p = the filtrate concentration measured during the challenge test. In applying this equation, the same units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, then the term C_p must be set equal to the detection limit.

(8) Each filter tested must be challenged with the challenge particulate during three periods over the filtration cycle: within two hours of start-up of a new filter; when the pressure drop is between 45 and 55 percent of the terminal pressure drop; and at the end of the cycle after the pressure drop has reached 100 percent of the terminal pressure drop. An LRV must be calculated for each of these challenge periods for each filter tested. The LRV for the filter (LRV_{filter}) must be assigned the value of the minimum LRV observed during the three challenge periods for that filter.

(9) If fewer than 20 filters are tested, the overall removal efficiency for the filter product line must be set equal to the lowest LRV_{filter} among the filters tested. If 20 or more filters are tested, the overall removal efficiency for the filter product line must be set equal to the 10th percentile of the set of LRV_{filter} values for the various filters tested. The percentile is defined by (i/(n+1)) where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

(10) If a previously tested filter is modified in a manner that could change the removal efficiency of the filter product line, challenge testing to demonstrate the removal efficiency of the modified filter must be conducted and submitted to the State.

(b) *Membrane filtration.* (1) Systems receive *Cryptosporidium* treatment credit for membrane filtration that meets the criteria of this paragraph. Membrane cartridge filters that meet the definition of membrane filtration in §141.2 are eligible for this credit. The level of treatment credit a system receives is equal to the lower of the values determined under paragraph (b)(1)(i) and (ii) of this section.

(i) The removal efficiency demonstrated during challenge testing conducted under the conditions in paragraph (b)(2) of this section.

(ii) The maximum removal efficiency that can be verified through direct integrity testing used with the membrane filtration process under the conditions in paragraph (b)(3) of this section.

(2) *Challenge testing.* The membrane used by the system must undergo challenge testing to evaluate removal efficiency, and the system must report the results of challenge testing to the State. Challenge testing must be conducted according to the criteria in paragraphs (b)(2)(i) through (vii) of this section. Systems may use data from challenge testing conducted prior to January 5, 2006 if the prior testing was consistent with the criteria in paragraphs (b)(2)(i) through (vii) of this section.

(i) Challenge testing must be conducted on either a full-scale membrane module, identical in material and construction to the membrane modules used in the system's treatment facility, or a smaller-scale membrane module, identical in material and similar in construction to the full-scale module. A module is defined as the smallest component of a membrane unit in which a specific membrane surface area is housed in a device with a filtrate outlet structure.

(ii) Challenge testing must be conducted using *Cryptosporidium* oocysts or a surrogate that is removed no more efficiently than *Cryptosporidium* oocysts. The organism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate, in

both the feed and filtrate water, must be determined using a method capable of discretely quantifying the specific challenge particulate used in the test; gross measurements such as turbidity may not be used.

(iii) The maximum feed water concentration that can be used during a challenge test is based on the detection limit of the challenge particulate in the filtrate and must be determined according to the following equation:

$$\text{Maximum Feed Concentration} = 3.16 \times 10^6 \times (\text{Filtrate Detection Limit})$$

(iv) Challenge testing must be conducted under representative hydraulic conditions at the maximum design flux and maximum design process recovery specified by the manufacturer for the membrane module. Flux is defined as the throughput of a pressure driven membrane process expressed as flow per unit of membrane area. Recovery is defined as the volumetric percent of feed water that is converted to filtrate over the course of an operating cycle uninterrupted by events such as chemical cleaning or a solids removal process (*i.e.*, backwashing).

(v) Removal efficiency of a membrane module must be calculated from the challenge test results and expressed as a log removal value according to the following equation:

$$LRV = LOG_{10}(C_f) - LOG_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during the challenge test; C_f = the feed concentration measured during the challenge test; and C_p = the filtrate concentration measured during the challenge test. Equivalent units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term C_p is set equal to the detection limit for the purpose of calculating the LRV. An LRV must be calculated for each membrane module evaluated during the challenge test.

(vi) The removal efficiency of a membrane filtration process demonstrated during challenge testing must be expressed as a log removal value ($LRV_{C\text{-}Test}$). If fewer than 20 modules are tested, then $LRV_{C\text{-}Test}$ is equal to the lowest of the representative LRVs among the modules tested. If 20 or more modules are tested, then $LRV_{C\text{-}Test}$ is equal to the 10th percentile of the representative LRVs among the modules tested. The percentile is defined by (i/(n+1)) where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

(vii) The challenge test must establish a quality control release value (QCRV) for a non-destructive performance test that demonstrates the *Cryptosporidium* removal capability of the membrane filtration module. This performance test must be applied to each production membrane module used by the system that was not directly challenge tested in order to verify *Cryptosporidium* removal capability. Production modules that do not meet the established QCRV are not eligible for the treatment credit demonstrated during the challenge test.

(viii) If a previously tested membrane is modified in a manner that could change the removal efficiency of the membrane or the applicability of the non-destructive performance test and associated QCRV, additional challenge testing to demonstrate the removal efficiency of, and determine a new QCRV for, the modified membrane must be conducted and submitted to the State.

(3) *Direct integrity testing.* Systems must conduct direct integrity testing in a manner that demonstrates a removal efficiency equal to or greater than the removal credit awarded to the membrane filtration process and meets the requirements described in paragraphs (b)(3)(i) through (vi) of this section. A direct integrity test is defined as a physical test applied to a membrane unit in order to identify and isolate integrity breaches (*i.e.*, one or more leaks that could result in contamination of the filtrate).

(i) The direct integrity test must be independently applied to each membrane unit in service. A membrane unit is defined as a group of membrane modules that share common valving that allows the unit to be isolated from the rest of the system for the purpose of integrity testing or other maintenance.

(ii) The direct integrity method must have a resolution of 3 micrometers or

less, where resolution is defined as the size of the smallest integrity breach that contributes to a response from the direct integrity test.

(iii) The direct integrity test must have a sensitivity sufficient to verify the log treatment credit awarded to the membrane filtration process by the State, where sensitivity is defined as the maximum log removal value that can be reliably verified by a direct integrity test. Sensitivity must be determined using the approach in either paragraph (b)(3)(iii)(A) or (B) of this section as applicable to the type of direct integrity test the system uses.

(A) For direct integrity tests that use an applied pressure or vacuum, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = LOG_{10} (Q_p / (VCF \times Q_{breach}))$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test; Q_p = total design filtrate flow from the membrane unit; Q_{breach} = flow of water from an integrity breach associated with the smallest integrity test response that can be reliably measured, and VCF = volumetric concentration factor. The volumetric concentration factor is the ratio of the suspended solids concentration on the high pressure side of the membrane relative to that in the feed water.

(B) For direct integrity tests that use a particulate or molecular marker, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = LOG_{10}(C_f) - LOG_{10}(C_p)$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test; C_f = the typical feed concentration of the marker used in the test; and C_p = the filtrate concentration of the marker from an integral membrane unit.

(iv) Systems must establish a control limit within the sensitivity limits of the direct integrity test that is indicative of an integral membrane unit capable of meeting the removal credit awarded by the State.

(v) If the result of a direct integrity test exceeds the control limit established under paragraph (b)(3)(iv) of this section, the system must remove the membrane unit from service. Systems must conduct a direct integrity test to verify any repairs, and may return the membrane unit to service only if the direct integrity test is within the established control limit.

(vi) Systems must conduct direct integrity testing on each membrane unit at a frequency of not less than once each day that the membrane unit is in operation. The State may approve less frequent testing, based on demonstrated process reliability, the use of multiple barriers effective for *Cryptosporidium*, or reliable process safeguards.

(4) *Indirect integrity monitoring.* Systems must conduct continuous indirect integrity monitoring on each membrane unit according to the criteria in paragraphs (b)(4)(i) through (v) of this section. Indirect integrity monitoring is defined as monitoring some aspect of filtrate water quality that is indicative of the removal of particulate matter. A system that implements continuous direct integrity testing of membrane units in accordance with the criteria in paragraphs (b)(3)(i) through (v) of this section is not subject to the requirements for continuous indirect integrity monitoring. Systems must submit a monthly report to the State summarizing all continuous indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken in each case.

(i) Unless the State approves an alternative parameter, continuous indirect integrity monitoring must include continuous filtrate turbidity monitoring.

(ii) Continuous monitoring must be conducted at a frequency of no less than once every 15 minutes.

(iii) Continuous monitoring must be separately conducted on each membrane unit.

(iv) If indirect integrity monitoring includes turbidity and if the filtrate turbidity readings are above 0.15 NTU for a period greater than 15 minutes (*i.e.*, two consecutive 15-minute readings above 0.15 NTU), direct integrity testing must immediately be performed on the associated membrane unit as specified in paragraphs (b)(3)(i) through (v) of this section.

(v) If indirect integrity monitoring includes a State-approved alternative

parameter and if the alternative parameter exceeds a State-approved control limit for a period greater than 15 minutes, direct integrity testing must immediately be performed on the associated membrane units as specified in paragraphs (b)(3)(i) through (v) of this section.

(c) *Second stage filtration.* Systems receive 0.5-log *Cryptosporidium* treatment credit for a separate second stage of filtration that consists of sand, dual media, GAC, or other fine grain media following granular media filtration if the State approves. To be eligible for this credit, the first stage of filtration must be preceded by a coagulation step and both filtration stages must treat the entire plant flow taken from a surface water or GWUDI source. A cap, such as GAC, on a single stage of filtration is not eligible for this credit. The State must approve the treatment credit based on an assessment of the design characteristics of the filtration process.

(d) *Slow sand filtration (as secondary filter).* Systems are eligible to receive 2.5-log *Cryptosporidium* treatment credit for a slow sand filtration process that follows a separate stage of filtration if both filtration stages treat entire plant flow taken from a surface water or GWUDI source and no disinfectant residual is present in the influent water to the slow sand filtration process. The State must approve the treatment credit based on an assessment of the design characteristics of the filtration process. This paragraph does not apply to treatment credit awarded to slow sand filtration used as a primary filtration process.

[71 FR 769, Jan. 5, 2006; 71 FR 6136, Feb. 6, 2006]

§ 141.720 Inactivation toolbox components.

(a) *Calculation of CT values.* (1) CT is the product of the disinfectant contact time (T, in minutes) and disinfectant concentration (C, in milligrams per liter). Systems with treatment credit for chlorine dioxide or ozone under paragraph (b) or (c) of this section must calculate CT at least once each day, with both C and T measured during peak hourly flow as specified in §§ 141.74(a) through (b).

(2) Systems with several disinfection segments in sequence may calculate CT for each segment, where a disinfection segment is defined as a treatment unit process with a measurable disinfectant residual level and a liquid volume. Under this approach, systems must add the *Cryptosporidium* CT values in each segment to determine the total CT for the treatment plant.

(b) *CT values for chlorine dioxide and ozone.* (1) Systems receive the *Cryptosporidium* treatment credit listed in this table by meeting the corresponding chlorine dioxide CT value for the applicable water temperature, as described in paragraph (a) of this section.

CT VALUES (MG·MIN/L) FOR *Cryptosporidium* INACTIVATION BY CHLORINE DIOXIDE [1]

Log credit	Water Temperature, °C										
	<=0.5	1	2	3	5	7	10	15	20	25	30
(i) 0.25	159	153	140	128	107	90	69	45	29	19	12
(ii) 0.5	319	305	279	256	214	180	138	89	58	38	24
(iii) 1.0	637	610	558	511	429	360	277	179	116	75	49
(iv) 1.5	956	915	838	767	643	539	415	268	174	113	73
(v) 2.0	1275	1220	1117	1023	858	719	553	357	232	150	98
(vi) 2.5	1594	1525	1396	1278	1072	899	691	447	289	188	122
(vii) 3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

[1] Systems may use this equation to determine log credit between the indicated values: Log credit = (0.001506 × $(1.09116)^{Temp}$) × CT.

(2) Systems receive the *Cryptosporidium* treatment credit listed in this table by meeting the corresponding ozone CT values for the applicable water temperature, as described in paragraph (a) of this section.

CT VALUES (MG·MIN/L) FOR *Cryptosporidium* INACTIVATION BY OZONE [1]

Log credit	Water Temperature, °C										
	<=0.5	1	2	3	5	7	10	15	20	25	30
(i) 0.25	6.0	5.8	5.2	4.8	4.0	3.3	2.5	1.6	1.0	0.6	0.39
(ii) 0.5	12	12	10	9.5	7.9	6.5	4.9	3.1	2.0	1.2	0.78
(iii) 1.0	24	23	21	19	16	13	9.9	6.2	3.9	2.5	1.6
(iv) 1.5	36	35	31	29	24	20	15	9.3	5.9	3.7	2.4
(v) 2.0	48	46	42	38	32	26	20	12	7.8	4.9	3.1
(vi) 2.5	60	58	52	48	40	33	25	16	9.8	6.2	3.9
(vii) 3.0	72	69	63	57	47	39	30	19	12	7.4	4.7

[1] Systems may use this equation to determine log credit between the indicated values: Log credit = $(0.0397 \times (1.09757)^{Temp}) \times CT$.

(c) *Site-specific study.* The State may approve alternative chlorine dioxide or ozone CT values to those listed in paragraph (b) of this section on a site-specific basis. The State must base this approval on a site-specific study a system conducts that follows a State-approved protocol.

(d) *Ultraviolet light.* Systems receive *Cryptosporidium, Giardia lamblia,* and virus treatment credits for ultraviolet (UV) light reactors by achieving the corresponding UV dose values shown in paragraph (d)(1) of this section. Systems must validate and monitor UV reactors as described in paragraphs (d)(2) and (3) of this section to demonstrate that they are achieving a particular UV dose value for treatment credit.

(1) *UV dose table.* The treatment credits listed in this table are for UV light at a wavelength of 254 nm as produced by a low pressure mercury vapor lamp. To receive treatment credit for other lamp types, systems must demonstrate an equivalent germicidal dose through reactor validation testing, as described in paragraph (d)(2) of this section. The UV dose values in this table are applicable only to post-filter applications of UV in filtered systems and to unfiltered systems.

UV DOSE TABLE FOR *Cryptosporidium, Giardia lamblia,* AND VIRUS INACTIVATION CREDIT

Log credit	*Cryptosporidium* UV dose (mJ/cm^2)	*Giardia lamblia* UV dose (mJ/cm^2)	Virus UV dose (mJ/cm^2)
(i) 0.5	1.6	1.5	39
(ii) 1.0	2.5	2.1	58
(iii) 1.5	3.9	3.0	79
(iv) 2.0	5.8	5.2	100
(v) 2.5	8.5	7.7	121
(vi) 3.0	12	11	143
(vii) 3.5	15	15	163
(viii) 4.0	22	22	186

(2) *Reactor validation testing.* Systems must use UV reactors that have undergone validation testing to determine the operating conditions under which the reactor delivers the UV dose required in paragraph (d)(1) of this section (*i.e.*, validated operating conditions). These operating conditions must include flow rate, UV intensity as measured by a UV sensor, and UV lamp status.

(i) When determining validated operating conditions, systems must account for the following factors: UV absorbance of the water; lamp fouling and aging; measurement uncertainty of online sensors; UV dose distributions arising from the velocity profiles through the reactor; failure of UV lamps or other critical system components; and inlet and outlet piping or channel configurations of the UV reactor.

(ii) Validation testing must include the following: Full scale testing of a reactor that conforms uniformly to the UV reactors used by the system and inactivation of a test microorganism whose dose response characteristics

have been quantified with a low pressure mercury vapor lamp.

(iii) The State may approve an alternative approach to validation testing.

(3) *Reactor monitoring.* (i) Systems must monitor their UV reactors to determine if the reactors are operating within validated conditions, as determined under paragraph (d)(2) of this section. This monitoring must include UV intensity as measured by a UV sensor, flow rate, lamp status, and other parameters the State designates based on UV reactor operation. Systems must verify the calibration of UV sensors and must recalibrate sensors in accordance with a protocol the State approves.

(ii) To receive treatment credit for UV light, systems must treat at least 95 percent of the water delivered to the public during each month by UV reactors operating within validated conditions for the required UV dose, as described in paragraphs (d)(1) and (2) of this section. Systems must demonstrate compliance with this condition by the monitoring required under paragraph (d)(3)(i) of this section.

Reporting and Recordkeeping Requirements

§ 141.721 Reporting requirements.

(a) Systems must report sampling schedules under § 141.702 and source water monitoring results under § 141.706 unless they notify the State that they will not conduct source water monitoring due to meeting the criteria of § 141.701(d).

(b) Systems must report the use of uncovered finished water storage facilities to the State as described in § 141.714.

(c) Filtered systems must report their *Cryptosporidium* bin classification as described in § 141.710.

(d) Unfiltered systems must report their mean source water *Cryptosporidium* level as described in § 141.712.

(e) Systems must report disinfection profiles and benchmarks to the State as described in §§ 141.708 through 141.709 prior to making a significant change in disinfection practice.

(f) Systems must report to the State in accordance with the following table for any microbial toolbox options used to comply with treatment requirements under § 141.711 or § 141.712. Alternatively, the State may approve a system to certify operation within required parameters for treatment credit rather than reporting monthly operational data for toolbox options.

Microbial Toolbox Reporting Requirements

Toolbox option	Systems must submit the following information	On the following schedule
(1) Watershed control program (WCP).	(i) Notice of intention to develop a new or continue an existing watershed control program.	No later than two years before the applicable treatment compliance date in § 141.713
	(ii) Watershed control plan	No later than one year before the applicable treatment compliance date in § 141.713.
	(iii) Annual watershed control program status report.	Every 12 months, beginning one year after the applicable treatment compliance date in § 141.713.
	(iv) Watershed sanitary survey report	For community water systems, every three years beginning three years after the applicable treatment compliance date in § 141.713. For noncommunity water systems, every five years beginning five years after the applicable treatment compliance date in § 141.713.
(2) Alternative source/intake management.	Verification that system has relocated the intake or adopted the intake withdrawal procedure reflected in monitoring results.	No later than the applicable treatment compliance date in § 141.713.

MICROBIAL TOOLBOX REPORTING REQUIREMENTS—Continued

Toolbox option	Systems must submit the following information	On the following schedule
(3) Presedimentation	Monthly verification of the following: (i) Continuous basin operation (ii) Treatment of 100% of the flow (iii) Continuous addition of a coagulant (iv) At least 0.5-log mean reduction of influent turbidity or compliance with alternative State-approved performance criteria.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(4) Two-stage lime softening	Monthly verification of the following: (i) Chemical addition and hardness precipitation occurred in two separate and sequential softening stages prior to filtration (ii) Both stages treated 100% of the plant flow.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(5) Bank filtration	(i) Initial demonstration of the following: (A) Unconsolidated, predominantly sandy aquifer (B) Setback distance of at least 25 ft. (0.5-log credit) or 50 ft. (1.0-log credit).	No later than the applicable treatment compliance date in § 141.713.
	(ii) If monthly average of daily max turbidity is greater than 1 NTU then system must report result and submit an assessment of the cause..	Report within 30 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(6) Combined filter performance	Monthly verification of combined filter effluent (CFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of the 4 hour CFE measurements taken each month.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(7) Individual filter performance	Monthly verification of the following: (i) Individual filter effluent (IFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter (ii) No individual filter greater than 0.3 NTU in two consecutive readings 15 minutes apart.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.]
(8) Demonstration of performance	(i) Results from testing following a State approved protocol.	No later than the applicable treatment compliance date in § 141.713.
	(ii) As required by the State, monthly verification of operation within conditions of State approval for demonstration of performance credit.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(9) Bag filters and cartridge filters	(i) Demonstration that the following criteria are met: (A) Process meets the definition of bag or cartridge filtration; (B) Removal efficiency established through challenge testing that meets criteria in this subpart.	No later than the applicable treatment compliance date in § 141.713.
	(ii) Monthly verification that 100% of plant flow was filtered.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(10) Membrane filtration	(i) Results of verification testing demonstrating the following: (A) Removal efficiency established through challenge testing that meets criteria in this subpart; (B) Integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline.	No later than the applicable treatment compliance date in § 141.713.
	(ii) Monthly report summarizing the following: (A) All direct integrity tests above the control limit; (B) If applicable, any turbidity or alternative state-approved indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(11) Second stage filtration	Monthly verification that 100% of flow was filtered through both stages and that first stage was preceded by coagulation step.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.

MICROBIAL TOOLBOX REPORTING REQUIREMENTS—Continued

Toolbox option	Systems must submit the following information	On the following schedule
(12) Slow sand filtration (as secondary filter).	Monthly verification that both a slow sand filter and a preceding separate stage of filtration treated 100% of flow from subpart H sources..	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(13) Chlorine dioxide	Summary of CT values for each day as described in § 141.720..	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(14) Ozone	Summary of CT values for each day as described in § 141.720..	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.
(15) UV	(i) Validation test results demonstrating operating conditions that achieve required UV dose. (ii) Monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose as specified in 141.720(d)..	No later than the applicable treatment compliance date in § 141.713. Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in § 141.713.

§ 141.722 Recordkeeping requirements.

(a) Systems must keep results from the initial round of source water monitoring under § 141.701(a) and the second round of source water monitoring under § 141.701(b) until 3 years after bin classification under § 141.710 for filtered systems or determination of the mean *Cryptosporidium* level under § 141.710 for unfiltered systems for the particular round of monitoring.

(b) Systems must keep any notification to the State that they will not conduct source water monitoring due to meeting the criteria of § 141.701(d) for 3 years.

(c) Systems must keep the results of treatment monitoring associated with microbial toolbox options under §§ 141.716 through 141.720 and with uncovered finished water reservoirs under § 141.714, as applicable, for 3 years.

REQUIREMENTS FOR SANITARY SURVEYS PERFORMED BY EPA

§ 141.723 Requirements to respond to significant deficiencies identified in sanitary surveys performed by EPA.

(a) A sanitary survey is an onsite review of the water source (identifying sources of contamination by using results of source water assessments where available), facilities, equipment, operation, maintenance, and monitoring compliance of a PWS to evaluate the adequacy of the PWS, its sources and operations, and the distribution of safe drinking water.

(b) For the purposes of this section, a significant deficiency includes a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that EPA determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.

(c) For sanitary surveys performed by EPA, systems must respond in writing to significant deficiencies identified in sanitary survey reports no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.

(d) Systems must correct significant deficiencies identified in sanitary survey reports according to the schedule approved by EPA, or if there is no approved schedule, according to the schedule reported under paragraph (c) of this section if such deficiencies are within the control of the system.

Subpart X—Aircraft Drinking Water Rule

SOURCE: 74 FR 53618, Oct. 19, 2009, unless otherwise noted.

§ 141.800 Applicability and compliance date.

(a) *Applicability.* The requirements of this subpart constitute the National Primary Drinking Water Regulations for aircraft that are public water systems and that board only finished water for human consumption. Aircraft public water systems are considered transient non-community water systems (TNCWS). To the extent there is a conflict between the requirements in this subpart and the regulatory requirements established elsewhere in this part, this subpart governs.

(b) *Compliance date.* Aircraft public water systems must comply, unless otherwise noted, with the requirements of this subpart beginning October 19, 2011. Until this compliance date, air carriers remain subject to existing national primary drinking water regulations.

§ 141.801 Definitions.

As used in this subpart, the term:

Administrator means the Administrator of the United States Environmental Protection Agency or his/her authorized representative.

Air carrier means a person who undertakes directly by lease, or other arrangement, to engage in air transportation. The air carrier is responsible for ensuring all of the aircraft it owns or operates that are public water systems comply with all provisions of this subpart.

Aircraft means a device that is used or intended to be used for flight in the air.

Aircraft water system means an aircraft that qualifies as a public water system under the Safe Drinking Water Act and the national primary drinking water regulations. The components of an aircraft water system include the water service panel, the filler neck of the aircraft finished water storage tank, and all finished water storage tanks, piping, treatment equipment, and plumbing fixtures within the aircraft that supply water for human consumption to passengers or crew.

Aircraft water system operations and maintenance plan means the schedules and procedures for operating, monitoring, and maintaining an aircraft water system that is included in an aircraft operation and maintenance program accepted by the Federal Aviation Administration. (14 CFR part 43, 14 CFR part 91, 14 CFR part 121)

Finished water means water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., supplemental disinfection, addition of corrosion control chemicals). (40 CFR 141.2)

Human consumption means drinking, bathing, showering, hand washing, teeth brushing, food preparation, dishwashing, and maintaining oral hygiene.

Self inspection means an onsite review of the aircraft water system, including the water service panel, the filler neck of the aircraft finished water storage tank; all finished water storage tanks, piping, treatment equipment, and plumbing fixtures; and a review of the aircraft operations, maintenance, monitoring, and recordkeeping for the purpose of evaluating the adequacy of such water system components and practices for providing safe drinking water to passengers and crew.

Watering point means the water supply, methods, and facilities used for the delivery of finished water to the aircraft. These facilities may include water trucks, carts, cabinets, and hoses.

§ 141.802 Coliform sampling plan.

(a) Each air carrier under this subpart must develop a coliform sampling plan covering each aircraft water system owned or operated by the air carrier that identifies the following:

(1) Coliform sample collection procedures that are consistent with the requirements of § 141.803(a) and (b).

(2) Sample tap location(s) representative of the aircraft water system as specified in § 141.803(b)(2) and (b)(4).

(3) Frequency and number of routine coliform samples to be collected as specified in § 141.803(b)(3).

(4) Frequency of routine disinfection and flushing as specified in the operations and maintenance plan under § 141.804.

(5) Procedures for communicating sample results promptly so that any

required actions, including repeat and follow-up sampling, corrective action, and notification of passengers and crew, will be conducted in a timely manner.

(b) Each air carrier must develop a coliform sampling plan for each aircraft with a water system meeting the definition of a public water system by April 19, 2011.

(c) The coliform sampling plan must be included in the Aircraft Water System Operations and Maintenance Plan required in §141.804. Any subsequent changes to the coliform sampling plan must also be included in the Aircraft Water System Operations and Maintenance Plan required in §141.804.

§ 141.803 Coliform sampling.

(a) *Analytical methodology.* Air carriers must follow the sampling and analysis requirements under this section.

(1) The standard sample volume required for total coliform analysis, regardless of analytical method used, is 100 mL.

(2) Air carriers need determine only the presence or absence of total coliforms and/or *E. coli*; a determination of density of these organisms is not required.

(3) Air carriers must conduct analyses for total coliform and *E. coli* in accordance with the analytical methods approved in §141.21(f)(3) and 141.21(f)(6)) until March 31, 2016, and in accordance with the analytical methods approved in §141.852 beginning April 1, 2016.

(4) The time from sample collection to initiation of analysis may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 °C during transit.

(5) The invalidation of a total coliform sample result can be made only by the Administrator in accordance with §141.21(c)(1)(i), (ii), or (iii) or by the certified laboratory in accordance with §141.21(c)(2) until March 31, 2016, or in accordance with §141.853(c) beginning April 1, 2016, with the Administrator acting as the State.

(6) *Certified laboratories.* For the purpose of determining compliance with this subpart, samples may be considered only if they have been analyzed by a laboratory certified by a State or EPA. For the purposes of this paragraph, "State" refers to a State or Tribe that has received primacy for public water systems (other than aircraft water systems) under section 1413 of SDWA.

(b) *Routine monitoring.* For each aircraft water system, the sampling frequency must be determined by the disinfection and flushing frequency recommended by the aircraft water system manufacturer, when available, and as identified in the operations and maintenance plan in §141.804.

(1) Except as provided in paragraph (b)(2) of this section, the air carrier must collect two 100 mL total coliform routine samples at the frequency specified in the sampling plan in §141.802 and in accordance with paragraph (b)(3) of this section;

(2) The air carrier may collect one 100 mL total coliform routine sample at the frequency specified in the sampling plan in §141.802 for aircraft with a removable or portable tank that is drained every day of passenger service, and the aircraft has only one tap. Aircraft meeting the requirements of this paragraph do not have to comply with paragraph (b)(4) of this section.

(3) Air carriers must perform routine monitoring for total coliform at a frequency corresponding to the frequency of routine disinfection and flushing as specified in the Table b–1 (Routine Disinfection and Flushing and Routine Sample Frequencies). Air carriers must follow the disinfection and flushing frequency recommended by the aircraft water system manufacturer, when available. Where the aircraft water system manufacturer does not specify a recommended routine disinfection and flushing frequency, the air carrier must choose a frequency from Table b–1 (Routine Disinfection and Flushing and Routine Sample Frequencies):

TABLE B–1—ROUTINE DISINFECTION AND FLUSHING AND ROUTINE SAMPLE FREQUENCIES

Minimum routine disinfection & flushing per aircraft	Minimum frequency of routine samples per aircraft
At least 4 times per year = At least once within every three-month period (quarterly).	At least 1 time per year = At least once within every twelve-month period (annually).
At least 3 times per year = At least once within every four-month period.	At least 2 times per year = At least once within every six-month period (semi-annually).
At least 2 times per year = At least once within every six-month period (semi-annually).	At least 4 times per year = At least once within every three-month period (quarterly).
At least 1 time per year or less = At least once within every twelve-month period (annually) or less.	At least 12 times per year = At least once every month (monthly).

(4) One sample must be taken from a lavatory and one from a galley; each sample must be analyzed for total coliform. If only one water tap is located in the aircraft water system due to aircraft model type and construction, then a single tap may be used to collect two separate 100 mL samples.

(5) If any routine, repeat, or follow-up coliform sample is total coliform-positive, the air carrier must analyze that total coliform-positive culture medium to determine if *E. coli* is present.

(6) Routine total coliform samples must not be collected within 72 hours after completing routine disinfection and flushing procedures.

(c) *Routine coliform sample results*—(1) *Negative routine coliform sample results.* If all routine sample results are total coliform-negative, then the air carrier must maintain the routine monitoring frequency for total coliform as specified in the sampling plan in §141.802.

(2) *Positive routine E. coli sample results.* If any routine sample is *E. coli*-positive, the air carrier must perform all of the following:

(i) *Restrict public access.* Restrict public access to the aircraft water system in accordance with paragraph (d) of this section as expeditiously as possible, but in no case later than 24 hours after the laboratory notifies the air carrier of the *E. coli*-positive result or discovery of the applicable failure as specified in paragraphs (g) and (h) of this section. All public access restrictions, including applicable public notification requirements, must remain in-place until the aircraft water system has been disinfected and flushed and a complete set of follow-up samples is total coliform-negative; and

(ii) *Disinfect and flush.* Conduct disinfection and flushing in accordance with §141.804(b)(2). If the aircraft water system cannot be physically disconnected or shut-off, or the flow of water otherwise prevented through the tap(s), then the air carrier must disinfect and flush the system no later than 72 hours after the laboratory notifies the air carrier of the *E. coli*-positive result or discovery of the applicable failure as specified in paragraphs (g) and (h) of this section; and

(iii) *Follow-up sampling.* Collect follow-up samples in accordance with paragraph (e) of this section. A complete set of follow-up sample results must be total coliform-negative before the air carrier provides water for human consumption from the aircraft water system and returns to the routine monitoring frequency as specified in the sampling plan required by §141.802.

(3) *Positive routine total coliform sample results.* If any routine sample is total coliform-positive and *E. coli*-negative, then the air carrier must perform at least one of the following three corrective actions and continue through with that action until a complete set of follow-up or repeat samples is total coliform-negative:

(i) *Disinfect and flush.* In accordance with §141.804(b)(2), conduct disinfection and flushing of the system no later than 72 hours after the laboratory notifies the air carrier of the total coliform-positive and *E. coli*-negative result. After disinfection and flushing is completed, the air carrier must collect follow-up samples in accordance with paragraph (e) of this section prior to providing water for human consumption from the aircraft water system. A complete set of follow-up sample results must be total coliform-negative before the air carrier returns to the

routine monitoring frequency as specified in the sampling plan required by §141.802; or

(ii) *Restrict public access.* In accordance with paragraph (d) of this section, restrict public access to the aircraft water system as expeditiously as possible, but in no case later than 72 hours after the laboratory notifies the air carrier of the total coliform-positive and *E. coli*-negative result or discovery of the applicable failure as specified in paragraphs (f), (g), and, (i) of this section. All public access restrictions, including applicable public notification requirements, must remain in-place until the aircraft water system has been disinfected and flushed, and a complete set of follow-up samples has been collected. The air carrier must conduct disinfection and flushing in accordance with §141.804(b)(2). After disinfection and flushing is completed, the air carrier must collect follow-up samples in accordance with paragraph (e) of this section prior to providing water for human consumption from the aircraft water system. A complete set of follow-up sample results must be total coliform-negative before the air carrier returns to the routine monitoring frequency as specified in the sampling plan required by §141.802; or

(iii) *Repeat sampling.* Collect three 100 mL repeat samples no later than 24 hours after the laboratory notifies the air carrier of the routine total coliform-positive and *E. coli*-negative result. Repeat samples must be collected and analyzed from three taps within the aircraft as follows: The tap which resulted in the total coliform-positive sample, one other lavatory tap, and one other galley tap. If fewer than three taps exist, then a total of three 100 mL samples must be collected and analyzed from the available taps within the aircraft water system.

(A) If all repeat samples are total coliform-negative, then the air carrier must maintain the routine monitoring frequency for total coliform as specified in the sampling plan in §141.802.

(B) If any repeat sample is *E. coli*-positive, the air carrier must perform all the corrective actions as specified in paragraphs (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section.

(C) If any repeat sample is total coliform-positive and *E. coli*-negative, then the air carrier must perform the corrective actions specified in paragraphs (c)(3)(i) or (c)(3)(ii) of this section, and continue through with that action until a complete set of follow-up samples is total coliform-negative.

(d) *Restriction of public access.* Restriction of public access to the aircraft water system includes, but need not be limited to, the following:

(1) Physically disconnecting or shutting off the aircraft water system, where feasible, or otherwise preventing the flow of water through the tap(s);

(2) Providing public notification to passengers and crew in accordance with §141.805.

(3) Providing alternatives to water from the aircraft water system, such as bottled water for drinking and coffee or tea preparation; antiseptic hand gels or wipes in accordance with 21 CFR part 333—"Topical Anti-microbial Drug Products for Over-the-Counter Human Use" in the galleys and lavatories; and other feasible measures that reduce or eliminate the need to use the aircraft water system during the limited period before public use of the aircraft water system is unrestricted.

(e) *Post disinfection and flushing follow-up sampling.* Following corrective action disinfection and flushing, air carriers must comply with post disinfection and flushing follow-up sampling procedures that, at a minimum, consist of the following:

(1) For each aircraft water system, the air carrier must collect a complete set of total coliform follow-up samples consisting of two 100 mL total coliform samples at the same routine sample locations as identified in paragraphs (b)(2) and (b)(4) of this section.

(2) Follow-up samples must be collected prior to providing water to the public for human consumption from the aircraft water system.

(3) If a complete set of follow-up samples is total coliform-negative, the air carrier must return to the routine monitoring frequency for total coliform as specified in the sampling plan required by §141.802.

(4) If any follow-up sample is *E. coli*-positive, the air carrier must perform all the corrective actions as specified

in paragraphs (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section.

(5) If any follow-up sample is total coliform-positive and *E. coli*-negative the air carrier must restrict public access to the aircraft water system in accordance with paragraph (d) of this section as expeditiously as possible, but in no case later than 72 hours after the laboratory notifies the air carrier of the total coliform-positive and *E. coli*-negative result. All public access restrictions, including applicable public notification requirements, must remain in-place until the aircraft water system has been disinfected and flushed in accordance with §141.804(b)(2) and a complete set of follow-up samples is total coliform-negative. The air carrier must collect follow-up samples in accordance with paragraph (e) of this section. A complete set of follow-up sample results must be total coliform-negative before the air carrier provides water for human consumption from the aircraft water system and returns to the routine monitoring frequency for coliform as specified in §141.802.

(f) *Failure to perform required routine disinfection and flushing or failure to collect required routine samples.* If the air carrier fails to perform routine disinfection and flushing or fails to collect and analyze the required number of routine coliform samples, the air carrier must perform all the corrective actions as specified in paragraph (c)(3)(ii) of this section.

(g) *Failure to collect repeat or follow-up samples.* If the air carrier fails to collect and analyze the required follow-up samples as a result of an *E. coli*-positive result, then the air carrier must perform all the corrective actions as specified in paragraphs (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section. If the air carrier fails to collect and analyze the required repeat samples or follow-up samples as a result of a total coliform-positive and *E. coli*-negative result, then the air carrier must perform all the corrective actions as specified in paragraph (c)(3)(ii) of this section.

(h) *Failure to board water from a safe watering point (E. coli-positive).* For the aircraft water system, the air carrier must perform all the corrective actions specified in paragraphs (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section when it becomes aware of an *E. coli*-positive event resulting from:

(1) Boarding water from a watering point not in accordance with FDA regulations (21 CFR part 1240 subpart E), or

(2) Boarding water that does not meet NPDWRs applicable to transient non-community water systems (§§141.62 and 141.63, as applied to TNCWS),

(3) Boarding water that is otherwise determined to be unsafe due to non-compliance with the procedures specified in §141.804(b)(6).

(i) *Failure to board water from a safe watering point (non-E. coli-positive).* For the aircraft water system, the air carrier must perform all the corrective actions specified in paragraphs (c)(3)(ii) of this section when it becomes aware of a non-*E. coli*-positive event resulting from:

(1) Boarding water from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E),

(2) Boarding water that does not meet NPDWRs applicable to transient non-community water systems (§§141.62 and 141.63, as applied to TNCWS), or

(3) Boarding water that is otherwise determined to be unsafe due to non-compliance with the procedures specified in §141.804(b)(6).

[74 FR 53618, Oct. 19, 2009, as amended at 78 FR 10354, Feb. 13, 2013]

§141.804 Aircraft water system operations and maintenance plan.

(a) Each air carrier must develop and implement an aircraft water system operations and maintenance plan for each aircraft water system that it owns or operates. This plan must be included in a Federal Aviation Administration (FAA)-accepted air carrier operations and maintenance program (14 CFR part 43, 14 CFR part 91, 14 CFR part 121).

(b) Each aircraft water system operations and maintenance plan must include the following:

(1) *Watering point selection requirement.* All watering points must be selected in accordance with Food and Drug Administration (FDA) regulations (21 CFR part 1240, subpart E).

(2) *Procedures for disinfection and flushing.* The plan must include the following requirements for procedures for disinfection and flushing of aircraft water system.

(i) The air carrier must conduct disinfection and flushing of the aircraft water system in accordance with, or is consistent with, the water system manufacturer's recommendations. The air carrier may conduct disinfection and flushing more frequently, but not less frequently, than the manufacturer recommends.

(ii) The operations and maintenance plan must identify the disinfection frequency, type of disinfecting agent, disinfectant concentration to be used, and the disinfectant contact time, and flushing volume or flushing time.

(iii) In cases where a recommended routine disinfection and flushing frequency is not specified by the aircraft water system manufacturer, the air carrier must choose a disinfection and flushing, and corresponding monitoring frequency specified in §141.803(b)(3).

(3) *Follow-up sampling.* The plan must include the procedures for follow-up sampling in accordance with §141.803(e).

(4) *Training requirements.* Training for all personnel involved with the aircraft water system operation and maintenance provisions of this regulation must include, but is not limited to the following:

(i) Boarding water procedures;

(ii) Sample collection procedures;

(iii) Disinfection and flushing procedures;

(iv) Public health and safety reasons for the requirements of this subpart.

(5) *Procedures for conducting self-inspections of the aircraft water system.* Procedures must include, but are not limited to, inspection of storage tank, distribution system, supplemental treatment, fixtures, valves, and backflow prevention devices.

(6) *Procedures for boarding water.* The plan must include the following requirements and procedures for boarding water:

(i) Within the United States, the air carrier must board water from watering points in accordance with Food and Drug Administration (FDA) regulations (21 CFR part 1240, subpart E).

(ii) A description of how the water will be transferred from the watering point to the aircraft in a manner that ensures it will not become contaminated during the transfer.

(iii) A description of how the carrier will ensure that water boarded outside the United States is safe for human consumption.

(iv) A description of emergency procedures that meet the requirements in §141.803(h) and (i) that must be used in the event that the air carrier becomes aware that water was boarded to operate essential systems, such as toilets, but was boarded from a watering point not in accordance with FDA regulations, does not meet NPDWRs applicable to transient non-community water systems (§§141.62 and 141.63, as applied to TNCWSs), or is otherwise unsafe.

(7) *Coliform sampling plan.* The air carrier must include the coliform sampling plan prepared in accordance with §141.802.

(8) *Aircraft water system disconnect/shut-off, or prevent flow of water through the tap(s) statement.* An explanation of whether the aircraft water system can be physically disconnected/shut-off, or the flow of water otherwise prevented through the tap(s) to the crew and passengers.

(c) For existing aircraft, the air carrier must develop the water system operations and maintenance plan required by this section by April 19, 2011;

(d) For new aircraft, the air carrier must develop the operations and maintenance plan required in this section within the first calendar quarter of initial operation of the aircraft.

(e) Any changes to the aircraft water system operations and maintenance plan must be included in the FAA-accepted air carrier operations and maintenance program.

§141.805 Notification to passengers and crew.

(a) Air carriers must give public notice for each aircraft in all of the following situations:

(1) Public access to the aircraft water system is restricted in response to a routine, repeat or follow-up total coliform-positive or *E. coli*-positive sample result in accordance with §141.803(d);

(2) Failure to perform required routine disinfection and flushing or failure to collect required routine samples in accordance with § 141.803(f);

(3) Failure to collect the required follow-up samples in response to a sample result that is *E. coli*-positive in accordance with § 141.803(g);

(4) Failure to collect the required repeat samples or failure to collect the required follow-up samples in response to a sample result that is total coliform-positive and *E. coli*-negative in accordance with § 141.803(g);

(5) In accordance with § 141.803(h), the air carrier becomes aware of an *E. coli*-positive event resulting from water that has been boarded from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E), or that does not meet NPDWRs applicable to transient non-community water systems, or that is otherwise determined to be unsafe due to non-compliance with the procedures specified in § 141.804(b)(6);

(6) In accordance with § 141.803(i), the air carrier becomes aware of a non-*E. coli*-positive event resulting from water that has been boarded from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E), or that does not meet NPDWRs applicable to transient non-community water systems, or that is otherwise determined to be unsafe due to non-compliance with the procedures specified in § 141.804(b)(6).

(7) The Administrator, the carrier, or the crew otherwise determines that notification is necessary to protect public health.

(b) *Public notification:* (1) Must be displayed in a conspicuous way when printed or posted;

(2) Must not contain overly technical language or very small print;

(3) Must not be formatted in a way that defeats the purpose of the notice;

(4) Must not contain language that nullifies the purpose of the notice;

(5) Must contain information in the appropriate language(s) regarding the importance of the notice, reflecting a good faith effort to reach the non-English speaking population served, including, where applicable, an easily recognized symbol for non-potable water.

(c) Public notification for paragraph (a)(1) of this section must meet the requirements of paragraph (b) of this section in addition to the following:

(1) Public notification must include a prominently displayed, clear statement in each lavatory indicating that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use; and

(2) A prominent notice in the galley directed at the crew which includes:

(i) A clear statement that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use;

(ii) A description of the violation or situation triggering the notice, including the contaminant(s) of concern;

(iii) When the violation or situation occurred;

(iv) Any potential adverse health effects from the violation or situation, as appropriate, under paragraph (g) of this section;

(v) The population at risk, including sensitive subpopulations particularly vulnerable if exposed to the contaminant in the drinking water;

(vi) What the air carrier is doing to correct the violation or situation; and

(vii) When the air carrier expects to return the system to unrestricted public access.

(3) If passenger access to the water system is physically prevented through disconnecting or shutting off the water, or the flow of water prevented through the tap(s), or if water is supplied only to lavatory toilets, and not to any lavatory or galley taps, then only the notice specified in paragraph (c)(2) of this section is required.

(4) Air carriers must initiate public notification when restriction of public access is initiated in accordance with § 141.803(d) and must continue until the aircraft water system is returned to unrestricted public access.

(d) Public notification for paragraphs (a)(2), (a)(4), and (a)(6) of this section must meet the requirements of paragraph (b) of this section in addition to the following:

(1) Public notification must include a prominently displayed, clear statement

in each lavatory indicating that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use; and

(2) A prominent notice in the galley directed at the crew which includes:

(i) A clear statement that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use;

(ii) A clear statement that it is not known whether the water is contaminated because there was a failure to perform required routine disinfection and flushing; or a failure to perform required monitoring; or water was boarded from a watering point not in accordance with FDA regulations, or that does not meet NPDWRs applicable to transient noncommunity water systems, or that is otherwise determined to be unsafe due to noncompliance with the procedures specified in §141.804(b)(6);

(iii) When and where the unsafe water was boarded or when the specific monitoring or disinfection and flushing requirement was not met;

(iv) Any potential adverse health effects from exposure to waterborne pathogens that might be in the water, as appropriate, under paragraph (g) of this section;

(v) The population at risk, including sensitive subpopulations particularly vulnerable if exposed to the contaminant in the drinking water; and

(vi) A statement indicating when the system will be disinfected and flushed and returned to unrestricted public access.

(3) If passenger access to the water system is physically prevented through disconnecting or shutting off the water, or the flow of water prevented through the tap(s), or if water is supplied only to lavatory toilets, and not to any lavatory or galley taps, then only the notice specified in paragraph (d)(2) of this section is required.

(4) Air carriers must initiate public notification when restriction of public access is initiated in accordance with §141.803(d) and must continue until the aircraft water system is returned to unrestricted public access.

(e) Public notification for paragraphs (a)(3) and (a)(5) of this section must meet the requirements of paragraph (b) of this section in addition to the following:

(1) Public notification must include a prominently displayed, clear statement in each lavatory indicating that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use; and

(2) A prominent notice in the galley directed at the crew which includes:

(i) A clear statement that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use;

(ii) A clear statement that the water is contaminated and there was a failure to conduct required monitoring; or a clear statement that water is contaminated because water was boarded from a watering point not in accordance with FDA regulations, or that does not meet NPDWRs applicable to transient noncommunity water systems, or that is otherwise determined to be unsafe due to noncompliance with the procedures specified in §141.804(b)(6);

(iii) A description of the contaminant(s) of concern;

(iv) When and where the unsafe water was boarded or when the specific monitoring requirement was not met;

(v) Any potential adverse health effects from the situation, as appropriate, under paragraph (g) of this section;

(vi) The population at risk, including sensitive subpopulations particularly vulnerable if exposed to the contaminant in the drinking water;

(vii) A statement indicating what the air carrier is doing to correct the situation; and

(viii) When the air carrier expects to return the system to unrestricted public access.

(3) If passenger access to the water system is physically prevented through disconnecting or shutting off the water, or the flow of water prevented through the tap(s), or if water is supplied only to lavatory toilets, and not to any lavatory or galley taps, then

only the notice specified in paragraph (e)(2) of this section is required.

(4) Air carriers must initiate public notification when restriction of public access is initiated in accordance with §141.803(d) and must continue public notification until a complete set of required follow-up samples are total coliform-negative.

(f) Public notification for paragraph (a)(7) of this section must meet the requirements of paragraph (b) of this section in addition to the following:

(1) Notification must be in a form and manner reasonably calculated to reach all passengers and crew while on board the aircraft by using one or more of the following forms of delivery:

(i) Broadcast over public announcement system on aircraft;

(ii) Posting of the notice in conspicuous locations throughout the area served by the water system. These locations would normally be the galleys and in the lavatories of each aircraft requiring posting;

(iii) Hand delivery of the notice to passengers and crew;

(iv) Another delivery method approved in writing by the Administrator.

(2) Air carriers must initiate public notification within 24 hours of being informed by EPA to perform notification and must continue notification for the duration determined by EPA.

(g) In each public notice to the crew, air carriers must use the following standard health effects language that corresponds to the situations in paragraphs (a)(1) through (a)(6) of this section.

(1) Health effects language to be used when public notice is initiated due to the detection of total coliforms only (not *E. coli*) in accordance with paragraph (a)(1) of this section:

Coliform are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in [INSERT NUMBER OF SAMPLES DETECTED] samples collected and this is a warning of potential problems. If human pathogens are present, they can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

(2) Health effects language to be used when public notice is initiated due to any *E. coli*-positive routine, repeat, or follow-up sample in accordance with paragraph (a)(1) of this section:

E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

(3) Health effects language to be used when public notice is initiated due to a failure to conduct routine monitoring or routine disinfection and flushing in accordance with paragraph (a)(2) of this section; or when there is a failure to conduct repeat or follow-up sampling in accordance with paragraph (a)(4) of this section; or in accordance with paragraph (a)(6) of this section, when the air carrier becomes aware of a non-*E. coli*-positive event that is the result of water that was boarded from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E), or that does not meet NPDWRs applicable to transient non-community water systems, or that is otherwise determined to be unsafe due to non-compliance with the procedures specified in §141.804(b)(6):

Because [REQUIRED MONITORING AND ANALYSIS WAS NOT CONDUCTED], [REQUIRED DISINFECTION AND FLUSHING WAS NOT CONDUCTED] [WATER WAS BOARDED FROM A WATERING POINT NOT IN ACCORDANCE WITH FDA REGULATIONS (21 CR 1240 SUBPART E)], or [OTHER APPROPRIATE EXPLANATION], we cannot be sure of the quality of the drinking water at this time. However, drinking water contaminated with human pathogens can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

(4) Health effects language to be used when public notice is initiated due to a failure to conduct required follow-up

monitoring in response to a sample result that is *E. coli*-positive in accordance with paragraph (a)(3) of this section; or in accordance with paragraph (a)(5) of this section, when the air carrier becomes aware of an *E. coli*-positive event that is the result of water that was boarded from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E), or that does not meet NPDWRs applicable to transient non-community water systems, or that is otherwise determined to be unsafe due to non-compliance with the procedures specified in § 141.804(b)(6):

Because required follow-up monitoring and analysis was not conducted after the aircraft water system tested positive for *E. coli*, we cannot be sure of the quality of the drinking water at this time. *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

OR

Water was boarded that is contaminated with *E. coli* because [WATER WAS BOARDED FROM A WATERING POINT NOT IN ACCORDANCE WITH FDA REGULATIONS (21 CR 1240 SUBPART E)], or [OTHER APPROPRIATE EXPLANATION]. *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

§ 141.806 Reporting requirements.

(a) The air carrier must comply with the following requirements regarding reporting of the development of the coliform sampling plan, the operations and maintenance plan, and the disinfection and flushing and coliform sampling frequencies.

(1) The air carrier must report to the Administrator that it has developed the coliform sampling plan required by § 141.802, which covers each existing aircraft water system, as well as report the frequency for routine coliform sampling identified in the coliform sampling plan by April 19, 2011. The air carrier must report to the Administrator that it has developed its operations and maintenance plan required by § 141.804 and report the frequency for routine disinfection and flushing by April 19, 2011;

(2) For each new aircraft meeting the definition of an aircraft water system, which becomes operational after publication of this subpart, the air carrier must report to the Administrator that it has developed the coliform sampling plan required by § 141.802, as well as report the frequency for routine coliform sampling identified in the coliform sampling plan, within the first calendar quarter of initial operation of the aircraft. The air carrier must report to the Administrator that it has developed the aircraft water system operations and maintenance plan required by § 141.804, and report the frequency for routine disinfection and flushing within the first calendar quarter of initial operation of the aircraft.

(b) The air carrier must report the following information to the Administrator:

(1) A complete inventory of aircraft that are public water systems by April 19, 2011. Inventory information includes, at a minimum, the following:

(i) The unique aircraft identifier number;

(ii) The status (active or inactive) of any aircraft as an aircraft water system as defined in § 141.801;

(iii) The type and location of any supplemental treatment equipment installed on the water system; and

(iv) Whether the aircraft water system can be physically disconnected or shut-off, or the flow of water prevented through the tap(s).

(2) Changes in aircraft inventory no later than 10 days following the calendar month in which the change occurred. Changes in inventory information include, at a minimum, the following:

(i) Change in the unique identifier number for any new aircraft, or any aircraft removed from the carrier's fleet;

(ii) Change in status (active or inactive) of any aircraft as an aircraft water system as defined in § 141.801; and

(iii) Change to the type and location of any supplemental treatment equipment added to or removed from the water system.

(iv) Change to whether the aircraft water system can be physically disconnected or shut-off, or the flow of water prevented through the tap(s).

(3) All sampling results no later than 10 calendar days following the monitoring period in which the sampling occurred. The monitoring period is based on the monitoring frequency identified in the coliform sampling plan required under §141.802. Routine disinfection and flushing events must be reported no later than 10 calendar days following the disinfection and flushing period in which the disinfection and flushing occurred. The disinfection and flushing period is based on the frequency identified in the operations and maintenance plan required under §141.804.

(4) All events requiring notification to passengers or crew, or non-routine disinfection and flushing, or non-routine sampling, within 10 days of the event (e.g., notification of positive sample result by laboratory), including information on whether required notification was provided to passengers or crew or both.

(5) Failure to comply with the monitoring or disinfection and flushing requirements of this subpart within 10 calendar days of discovery of the failure.

(6) Changes in disinfection and flushing and coliform sampling frequencies no later than 10 days following the calendar month in which the change occurred. Changes to an aircraft's routine coliform sampling frequency and routine disinfection and flushing frequency must be included in the aircraft water system operation and maintenance plan that is included in the air carrier operations and maintenance program accepted by FAA in accordance with §141.804.

(c) The air carrier must provide evidence of a self-inspection to the Administrator within 90 days of completion of the self-inspection required under §141.808(b), including reporting whether all deficiencies were addressed in accordance with §141.808(c). The air carrier must also report to the Administrator within 90 days that any deficiency identified during a compliance audit conducted in accordance with §141.808(a) has been addressed. If any deficiency has not been addressed within 90 days of identification of the deficiency, the report must also include a description of the deficiency, an explanation as to why it has not yet been addressed, and a schedule for addressing it as expeditiously as possible.

(d) All information required to be reported to the Administrator under this subpart must be in an electronic format established or approved by the Administrator. If an air carrier is unable to report electronically, the air carrier may use an alternative approach that the Administrator approves.

§141.807 Recordkeeping requirements.

(a) The air carrier must keep records of bacteriological analyses for at least 5 years and must include the following information:

(1) The date, time, and place of sampling, and the name of the person who collected the sample;

(2) Identification of the sample as a routine, repeat, follow-up, or other special purpose sample;

(3) Date of the analysis;

(4) Laboratory and person responsible for performing the analysis;

(5) The analytical technique/method used; and

(6) The results of the analysis.

(b) The air carrier must keep records of any disinfection and flushing for at least 5 years and must include the following information:

(1) The date and time of the disinfection and flushing; and

(2) The type of disinfection and flushing (*i.e.*, routine or corrective action).

(c) The air carrier must keep records of a self-inspection for at least 10 years and must include the following information:

(1) The completion date of the self-inspection; and

(2) Copies of any written reports, summaries, or communications related to the self-inspection.

(d) The air carrier must maintain sampling plans and make such plans available for review by the Administrator upon request, including during compliance audits.

(e) The air carrier must maintain aircraft water system operations and maintenance plans in accordance with FAA requirements, and make such plans available for review by the Administrator upon request, including during compliance audits.

(f) The air carrier must keep copies of public notices to passengers and crew issued as required by this subpart for at least 3 years after issuance.

§ 141.808 Audits and inspections.

(a) The Administrator may conduct routine compliance audits as deemed necessary in providing regulatory oversight to ensure proper implementation of the requirements in this subpart. Compliance audits may include, but are not limited to:

(1) Bacteriological sampling of aircraft water system;

(2) Reviews and audits of records as they pertain to water system operations and maintenance such as log entries, disinfection and flushing procedures, and sampling results; and

(3) Observation of procedures involving the handling of finished water, watering point selection, boarding of water, operation, disinfection and flushing, and general maintenance and self-inspections of aircraft water system.

(b) Air carriers or their representatives must perform a self-inspection of all water system components for each aircraft water system no less frequently than once every 5 years.

(c) The air carrier must address any deficiency identified during compliance audits or routine self-inspections within 90 days of identification of the deficiency, or where such deficiency is identified during extended or heavy maintenance, before the aircraft is put back into service. This includes any deficiency in the water system's design, construction, operation, maintenance, or administration, as well as any failure or malfunction of any system component that has the potential to cause an unacceptable risk to health or that could affect the reliable delivery of safe drinking water.

§ 141.809 Supplemental treatment.

(a) Any supplemental drinking water treatment units installed onboard existing or new aircraft must be acceptable to FAA and FDA; and must be installed, operated, and maintained in accordance with the manufacturer's plans and specifications and FAA requirements.

(b) Water supplemental treatment and production equipment must produce water that meets the standards prescribed in this part.

§ 141.810 Violations.

An air carrier is in violation of this subpart when, for any aircraft water system it owns or operates, any of the following occur:

(a) It fails to perform any of the requirements in accordance with § 141.803 or § 141.804.

(b) It has an *E. coli*-positive sample in any monitoring period (routine and repeat samples are used in this determination).

(c) It fails to provide notification to passengers and crew in accordance with § 141.805.

(d) It fails to comply with the reporting and recordkeeping requirements of this subpart.

(e) It fails to conduct a self-inspection or address a deficiency in accordance with § 141.808.

(f) It fails to develop a coliform sampling plan in accordance with § 141.802, or fails to have and follow an operations and maintenance plan, which is included in a FAA accepted program in accordance with § 141.804.

Subpart Y—Revised Total Coliform Rule

SOURCE: 78 FR 10354, Feb. 13, 2013, unless otherwise noted.

§ 141.851 General.

(a) *General.* The provisions of this subpart include both maximum contaminant level and treatment technique requirements.

(b) *Applicability.* The provisions of this subpart apply to all public water systems.

(c) *Compliance date.* Systems must comply with the provisions of this subpart beginning April 1, 2016, unless otherwise specified in this subpart.

(d) *Implementation with EPA as State.* Systems falling under direct oversight

of EPA, where EPA acts as the State, must comply with decisions made by EPA for implementation of subpart Y. EPA has authority to establish such procedures and criteria as are necessary to implement subpart Y.

(e) *Violations of national primary drinking water regulations.* Failure to comply with the applicable requirements of §§ 141.851 through 141.861, including requirements established by the State pursuant to these provisions, is a violation of the national primary drinking water regulations under subpart Y.

§ 141.852 Analytical methods and laboratory certification.

(a) *Analytical methodology.* (1) The standard sample volume required for analysis, regardless of analytical method used, is 100 ml.

(2) Systems need only determine the presence or absence of total coliforms and *E. coli;* a determination of density is not required.

(3) The time from sample collection to initiation of test medium incubation may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 deg. C during transit.

(4) If water having residual chlorine (measured as free, combined, or total chlorine) is to be analyzed, sufficient sodium thiosulfate ($Na_2S_2O_3$) must be added to the sample bottle before sterilization to neutralize any residual chlorine in the water sample. Dechlorination procedures are addressed in Section 9060A.2 of *Standard Methods for the Examination of Water and Wastewater* (20th and 21st editions).

(5) Systems must conduct total coliform and *E. coli* analyses in accordance with one of the analytical methods in the following table or one of the alternative methods listed in Appendix A to subpart C of part 141.

Organism	Methodology category	Method[1]	Citation[1]
Total Coliforms	Lactose Fermentation Methods	Standard Total Coliform Fermentation Technique.	Standard Methods 9221 B.1, B.2 (20th ed.; 21st ed.),[2,3]
			Standard Methods Online 9221 B.1, B.2–99.[2,3]
		Presence-Absence (P–A) Coliform Test	Standard Methods 9221 D.1, D.2 (20th ed.; 21st ed.),[2,7]
			Standard Methods Online 9221 D.1, D.2–99.[2,7]
	Membrane Filtration Methods	Standard Total Coliform Membrane Filter Procedure.	Standard Methods 9222 B, C (20th ed.; 21st ed.),[2,4]
			Standard Methods Online 9222 B–97[2,4], 9222 C–97.[2,4]
		Membrane Filtration using MI medium	EPA Method 1604.[2]
		m-ColiBlue24® Test[2,4], Chromocult[2,4],	
	Enzyme Substrate Methods	Colilert®	Standard Methods 9223 B (20th ed.; 21st ed.),[2,5]
			Standard Methods Online 9223 B–97.[2,5]
		Colisure®	Standard Methods 9223 B (20th ed.; 21st ed.),[2,5,6]
			Standard Methods Online 9223 B–97.[2,5,6]
		E*Colite® Test[2], Readycult® Test[2], modified Colitag® Test[2],	
Escherichia coli.	*Escherichia coli* Procedure (following Lactose Fermentation Methods).	EC–MUG medium	Standard Methods 9221 F.1 (20th ed.; 21st ed.)[2]
	Escherichia coli Partition Method	EC broth with MUG (EC–MUG)	Standard Methods 9222 G.1c(2) (20th ed.; 21st ed.)[2,8]
		NA–MUG medium	Standard Methods 9222 G.1c(1) (20th ed.; 21st ed.)[2]
	Membrane Filtration Methods	Membrane Filtration using MI medium	EPA Method 1604[2]
		m-ColiBlue24® Test[2,4], Chromocult[2,4],	
	Enzyme Substrate Methods	Colilert®	Standard Methods 9223 B (20th ed.; 21st ed.)[2,5]
			Standard Methods Online 9223 B–97[2,5,6]
		Colisure®	Standard Methods 9223 B (20th ed.; 21st ed.)[2,5,6]
			Standard Methods Online 9223 B–97[2,5,6]
		E*Colite® Test[2], Readycult® Test[2], modified Colitag® Test[2],	

[1] The procedures must be done in accordance with the documents listed in paragraph (c) of this section. For Standard Methods, either editions, 20th (1998) or 21st (2005), may be used. For the Standard Methods Online, the year in which each method was approved by the Standard Methods Committee is designated by the last two digits following the hyphen in the method number. The methods listed are the only online versions that may be used. For vendor methods, the date of the method listed in paragraph (c) of this section is the date/version of the approved method. The methods listed are the only versions that may be used for compliance with this rule. Laboratories should be careful to use only the approved versions of the methods, as product package inserts may not be the same as the approved versions of the methods.

[2] Incorporated by reference. See paragraph (c) of this section.

[3] Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between lactose broth and lauryl tryptose broth using the water normally tested, and if the findings from this comparison demonstrate that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent.

[4] All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (*i.e.*, disposable funnel units) may be used.

[5] Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this regulation.

[6] Colisure® results may be read after an incubation time of 24 hours.

[7] A multiple tube enumerative format, as described in *Standard Methods for the Examination of Water and Wastewater 9221*, is approved for this method for use in presence-absence determination under this regulation.

[8] The following changes must be made to the EC broth with MUG (EC–MUG) formulation: Potassium dihydrogen phosphate, KH_2PO_4, must be 1.5g, and 4-methylumbelliferyl-Beta-D-glucuronide must be 0.05 g.

(b) *Laboratory certification.* Systems must have all compliance samples required under this subpart analyzed by a laboratory certified by the EPA or a primacy State to analyze drinking water samples. The laboratory used by the system must be certified for each method (and associated contaminant(s)) used for compliance monitoring analyses under this rule.

(c) *Incorporation by reference.* The standards required in this section are incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, EPA must publish notice of change in the FEDERAL REGISTER and the material must be available to the public. All approved material is available for inspection either electronically at *www.regulations.gov,* in hard copy at the Water Docket, or from the sources indicated below. The Docket ID is EPA–HQ–OW–2008–0878. Hard copies of these documents may be viewed at the Water Docket in the EPA Docket Center, (EPA/DC) EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is 1–202–566–1744, and the telephone number for the Water Docket is 1–202–566–2426. Copyrighted materials are only available for viewing in hard copy. These documents are also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 1–202–741–6030 or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(1) American Public Health Association, 800 I Street, NW., Washington, DC 20001.

(i) "Standard Methods for the Examination of Water and Wastewater," 20th edition (1998):

(A) Standard Methods 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group," B.1, B.2, "Standard Total Coliform Fermentation Technique."

(B) Standard Methods 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group," D.1, D.2, "Presence-Absence (P–A) Coliform Test."

(C) Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," B, "Standard Total Coliform Membrane Filter Procedure."

(D) Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," C, "Delayed-Incubation Total Coliform Procedure."

(E) Standard Methods 9223, "Enzyme Substrate Coliform Test," B, "Enzyme Substrate Test," Colilert® and Colisure®.

(F) Standard Methods 9221, "Multiple Tube Fermentation Technique for Members of the Coliform Group," F.1, "*Escherichia coli* Procedure: EC–MUG medium."

(G) Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," G.1.*c*(2), "*Escherichia coli* Partition Method: EC broth with MUG (EC–MUG)."

(H) Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," G.1.*c*(1), "*Escherichia coli* Partition Method: NA–MUG medium."

(ii) "Standard Methods for the Examination of Water and Wastewater," 21st edition (2005):

(A) Standard Methods 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group," B.1, B.2, "Standard Total Coliform Fermentation Technique."

(B) Standard Methods 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group," D.1, D.2, "Presence-Absence (P–A) Coliform Test."

(C) Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," B, "Standard Total Coliform Membrane Filter Procedure."

(D) Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," C, "Delayed-Incubation Total Coliform Procedure."

(E) Standard Methods 9223, "Enzyme Substrate Coliform Test," B, "Enzyme Substrate Test," Colilert® and Colisure®.

(F) Standard Methods 9221, ''Multiple Tube Fermentation Technique for Members of the Coliform Group,'' F.1, ''*Escherichia coli* Procedure: EC–MUG medium.''

(G) Standard Methods 9222, ''Membrane Filter Technique for Members of the Coliform Group,'' G.1.*c*(2), ''*Escherichia coli* Partition Method: EC broth with MUG (EC–MUG).''

(H) Standard Methods 9222, ''Membrane Filter Technique for Members of the Coliform Group,'' G.1.*c*(1), ''*Escherichia coli* Partition Method: NA–MUG medium.''

(iii) ''Standard Methods Online'' available at *http://www.standardmethods.org:*

(A) Standard Methods Online 9221, ''Multiple-Tube Fermentation Technique for Members of the Coliform Group'' (1999), B.1, B.2–99, ''Standard Total Coliform Fermentation Technique.''

(B) Standard Methods Online 9221, ''Multiple-Tube Fermentation Technique for Members of the Coliform Group'' (1999), D.1, D.2–99, ''Presence-Absence (P–A) Coliform Test.''

(C) Standard Methods Online 9222, ''Membrane Filter Technique for Members of the Coliform Group'' (1997), B–97, ''Standard Total Coliform Membrane Filter Procedure.''

(D) Standard Methods Online 9222, ''Membrane Filter Technique for Members of the Coliform Group'' (1997), C–97, ''Delayed-Incubation Total Coliform Procedure.''

(E) Standard Methods Online 9223, ''Enzyme Substrate Coliform Test'' (1997), B–97, ''Enzyme Substrate Test'', Colilert® and Colisure®.

(2) Charm Sciences, Inc., 659 Andover Street, Lawrence, MA 01843–1032, telephone 1–800–343–2170:

(i) E*Colite®—''Charm E*Colite™ Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water,'' January 9, 1998.

(ii) [Reserved]

(3) CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA, 95403, telephone 1–800–878–7654:

(i) modified Colitag®, ATP D05–0035—''Modified Colitag™ Test Method for the Simultaneous Detection of *E. coli* and other Total Coliforms in Water,'' August 28, 2009.

(ii) [Reserved]

(4) EMD Millipore (a division of Merck KGaA, Darmstadt Germany), 290 Concord Road, Billerica, MA 01821, telephone 1–800–645–5476:

(i) Chromocult—''Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* for Finished Waters,'' November 2000, Version 1.0.

(ii) Readycult®—''Readycult® Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,'' January 2007, Version 1.1.

(5) EPA's Water Resource Center (MC–4100T), 1200 Pennsylvania Avenue NW., Washington, DC 20460, telephone 1–202–566–1729:

(i) EPA Method 1604, EPA 821–R–02–024—''EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium),'' September 2002, *http://www.epa.gov/nerlcwww/1604sp02.pdf.*

(ii) [Reserved]

(6) Hach Company, P.O. Box 389, Loveland, CO 80539, telephone 1–800–604–3493:

(i) m-ColiBlue24®—''Membrane Filtration Method m-ColiBlue24® Broth,'' Revision 2, August 17, 1999.

(ii) [Reserved]

[78 FR 10354, Feb. 13, 2013, as amended at 79 FR 10669, Feb. 26, 2014]

§ 141.853 General monitoring requirements for all public water systems.

(a) *Sample siting plans.* (1) Systems must develop a written sample siting plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution system not later than March 31, 2016. These plans are subject to State review and revision. Systems must collect total coliform samples according to the written sample siting plan. Monitoring required by §§ 141.854 through 141.858 may take place at a customer's premise, dedicated sampling station, or other designated compliance sampling location. Routine and repeat sample sites and any sampling

points necessary to meet the requirements of subpart S must be reflected in the sampling plan.

(2) Systems must collect samples at regular time intervals throughout the month, except that systems that use only ground water and serve 4,900 or fewer people may collect all required samples on a single day if they are taken from different sites.

(3) Systems must take at least the minimum number of required samples even if the system has had an *E. coli* MCL violation or has exceeded the coliform treatment technique triggers in § 141.859(a).

(4) A system may conduct more compliance monitoring than is required by this subpart to investigate potential problems in the distribution system and use monitoring as a tool to assist in uncovering problems. A system may take more than the minimum number of required routine samples and must include the results in calculating whether the coliform treatment technique trigger in § 141.859(a)(1)(i) and (ii) has been exceeded only if the samples are taken in accordance with the existing sample siting plan and are representative of water throughout the distribution system.

(5) Systems must identify repeat monitoring locations in the sample siting plan. Unless the provisions of paragraphs (a)(5)(i) or (a)(5)(ii) of this section are met, the system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system must still take all required repeat samples. However, the State may allow an alternative sampling location in lieu of the requirement to collect at least one repeat sample upstream or downstream of the original sampling site. Except as provided for in paragraph (a)(5)(ii) of this section, systems required to conduct triggered source water monitoring under § 141.402(a) must take ground water source sample(s) in addition to repeat samples required under this subpart.

(i) Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan. The system must design its SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on specific situations. The State may modify the SOP or require alternative monitoring locations as needed.

(ii) Ground water systems serving 1,000 or fewer people may propose repeat sampling locations to the State that differentiate potential source water and distribution system contamination (e.g., by sampling at entry points to the distribution system). A ground water system with a single well required to conduct triggered source water monitoring may, with written State approval, take one of its repeat samples at the monitoring location required for triggered source water monitoring under § 141.402(a) if the system demonstrates to the State's satisfaction that the sample siting plan remains representative of water quality in the distribution system. If approved by the State, the system may use that sample result to meet the monitoring requirements in both § 141.402(a) and this section.

(A) If a repeat sample taken at the monitoring location required for triggered source water monitoring is *E. coli*-positive, the system has violated the *E. coli* MCL and must also comply with § 141.402(a)(3). If a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring, the system may reduce the number of additional source water samples required under § 141.402(a)(3) by the number of repeat samples taken at that location that were not *E. coli*-positive.

(B) If a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring under §141.402(a), and more than one repeat sample is *E. coli*-positive, the system has violated the *E. coli* MCL and must also comply with §141.403(a)(1).

(C) If all repeat samples taken at the monitoring location required for triggered source water monitoring are *E. coli*-negative and a repeat sample taken at a monitoring location other than the one required for triggered source water monitoring is *E. coli*-positive, the system has violated the *E. coli* MCL, but is not required to comply with §141.402(a)(3).

(6) States may review, revise, and approve, as appropriate, repeat sampling proposed by systems under paragraphs (a)(5)(i) and (ii) of this section. The system must demonstrate that the sample siting plan remains representative of the water quality in the distribution system. The State may determine that monitoring at the entry point to the distribution system (especially for undisinfected ground water systems) is effective to differentiate between potential source water and distribution system problems.

(b) *Special purpose samples.* Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, must not be used to determine whether the coliform treatment technique trigger has been exceeded. Repeat samples taken pursuant to §141.858 are not considered special purpose samples, and must be used to determine whether the coliform treatment technique trigger has been exceeded.

(c) *Invalidation of total coliform samples.* A total coliform-positive sample invalidated under this paragraph (c) of this section does not count toward meeting the minimum monitoring requirements of this subpart.

(1) The State may invalidate a total coliform-positive sample only if the conditions of paragraph (c)(1)(i), (ii), or (iii) of this section are met.

(i) The laboratory establishes that improper sample analysis caused the total coliform-positive result.

(ii) The State, on the basis of the results of repeat samples collected as required under §141.858(a), determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. The State cannot invalidate a sample on the basis of repeat sample results unless all repeat sample(s) collected at the same tap as the original total coliform-positive sample are also total coliform-positive, and all repeat samples collected at a location other than the original tap are total coliform-negative (e.g., a State cannot invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the system has only one service connection).

(iii) The State has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system. In this case, the system must still collect all repeat samples required under §141.858(a), and use them to determine whether a coliform treatment technique trigger in §141.859 has been exceeded. To invalidate a total coliform-positive sample under this paragraph, the decision and supporting rationale must be documented in writing, and approved and signed by the supervisor of the State official who recommended the decision. The State must make this document available to EPA and the public. The written documentation must state the specific cause of the total coliform-positive sample, and what action the system has taken, or will take, to correct this problem. The State may not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative.

(2) A laboratory must invalidate a total coliform sample (unless total coliforms are detected) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the Multiple-Tube Fermentation Technique), produces a turbid culture in the absence of an acid reaction in the Presence-Absence (P–A) Coliform Test, or exhibits confluent

growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., Membrane Filter Technique). If a laboratory invalidates a sample because of such interference, the system must collect another sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The system must continue to re-sample within 24 hours and have the samples analyzed until it obtains a valid result. The State may waive the 24-hour time limit on a case-by-case basis. Alternatively, the State may implement criteria for waiving the 24-hour sampling time limit to use in lieu of case-by-case extensions.

§ 141.854 Routine monitoring requirements for non-community water systems serving 1,000 or fewer people using only ground water.

(a) *General.* (1) The provisions of this section apply to non-community water systems using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving 1,000 or fewer people.

(2) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in §141.858.

(3) Once all monitoring required by this section and §141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in §141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by §141.859.

(4) For the purpose of determining eligibility for remaining on or qualifying for quarterly monitoring under the provisions of paragraphs (f)(4) and (g)(2), respectively, of this section for transient non-community water systems, the State may elect to not count monitoring violations under §141.860(c)(1) of this part if the missed sample is collected no later than the end of the monitoring period following the monitoring period in which the sample was missed. The system must collect the make-up sample in a different week than the routine sample for that monitoring period and should collect the sample as soon as possible during the monitoring period. The State may not use this provision under paragraph (h) of this section. This authority does not affect the provisions of §§141.860(c)(1) and 141.861(a)(4) of this part.

(b) *Monitoring frequency for total coliforms.* Systems must monitor each calendar quarter that the system provides water to the public, except for seasonal systems or as provided under paragraphs (c) through (h) and (j) of this section. Seasonal systems must meet the monitoring requirements of paragraph (i) of this section.

(c) *Transition to subpart Y.* (1) Systems, including seasonal systems, must continue to monitor according to the total coliform monitoring schedules under §141.21 that were in effect on March 31, 2016, unless any of the conditions for increased monitoring in paragraph (f) of this section are triggered on or after April 1, 2016, or unless otherwise directed by the State.

(2) Beginning April 1, 2016, the State must perform a special monitoring evaluation during each sanitary survey to review the status of the system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. After the State has performed the special monitoring evaluation during each sanitary survey, the State may modify the system's monitoring schedule, as necessary, or it may allow the system to stay on its existing monitoring schedule, consistent with the provisions of this section. The State may not allow systems to begin less frequent monitoring under the special monitoring evaluation unless the system has already met the applicable criteria for less frequent monitoring in this section. For seasonal systems on quarterly or annual monitoring, this evaluation must include review of the approved sample siting plan, which must designate the time period(s) for monitoring based on site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). The seasonal system

must collect compliance samples during these time periods.

(d) *Annual site visits.* Beginning no later than calendar year 2017, systems on annual monitoring, including seasonal systems, must have an initial and recurring annual site visit by the State that is equivalent to a Level 2 assessment or an annual voluntary Level 2 assessment that meets the criteria in §141.859(b) to remain on annual monitoring. The periodic required sanitary survey may be used to meet the requirement for an annual site visit for the year in which the sanitary survey was completed.

(e) *Criteria for annual monitoring.* Beginning April 1, 2016, the State may reduce the monitoring frequency for a well-operated ground water system from quarterly routine monitoring to no less than annual monitoring, if the system demonstrates that it meets the criteria for reduced monitoring in paragraphs (e)(1) through (e)(3) of this section, except for a system that has been on increased monitoring under the provisions of paragraph (f) of this section. A system on increased monitoring under paragraph (f) of this section must meet the provisions of paragraph (g) of this section to go to quarterly monitoring and must meet the provisions of paragraph (h) of this section to go to annual monitoring.

(1) The system has a clean compliance history for a minimum of 12 months;

(2) The most recent sanitary survey shows that the system is free of sanitary defects or has corrected all identified sanitary defects, has a protected water source, and meets approved construction standards; and

(3) The State has conducted an annual site visit within the last 12 months and the system has corrected all identified sanitary defects. The system may substitute a Level 2 assessment that meets the criteria in §141.859(b) for the State annual site visit.

(f) *Increased monitoring requirements for systems on quarterly or annual monitoring.* A system on quarterly or annual monitoring that experiences any of the events identified in paragraphs (f)(1) through (f)(4) of this section must begin monthly monitoring the month following the event. A system on annual monitoring that experiences the event identified in paragraphs (f)(5) of this section must begin quarterly monitoring the quarter following the event. The system must continue monthly or quarterly monitoring until the requirements in paragraph (g) of this section for quarterly monitoring or paragraph (h) of this section for annual monitoring are met. A system on monthly monitoring for reasons other than those identified in paragraphs (f)(1) through (f)(4) of this section is not considered to be on increased monitoring for the purposes of paragraphs (g) and (h) of this section.

(1) The system triggers a Level 2 assessment or two Level 1 assessments under the provisions of §141.859 in a rolling 12-month period.

(2) The system has an *E. coli* MCL violation.

(3) The system has a coliform treatment technique violation.

(4) The system has two subpart Y monitoring violations or one subpart Y monitoring violation and one Level 1 assessment under the provisions of §141.859 in a rolling 12-month period for a system on quarterly monitoring.

(5) The system has one subpart Y monitoring violation for a system on annual monitoring.

(g) *Requirements for returning to quarterly monitoring.* The State may reduce the monitoring frequency for a system on monthly monitoring triggered under paragraph (f) of this section to quarterly monitoring if the system meets the criteria in paragraphs (g)(1) and (g)(2) of this section.

(1) Within the last 12 months, the system must have a completed sanitary survey or a site visit by the State or a voluntary Level 2 assessment by a party approved by the State, be free of sanitary defects, and have a protected water source; and

(2) The system must have a clean compliance history for a minimum of 12 months.

(h) *Requirements for systems on increased monitoring to qualify for annual monitoring.* The State may reduce the monitoring frequency for a system on increased monitoring under paragraph (f) of this section if the system meets

the criteria in paragraph (g) of this section plus the criteria in paragraphs (h)(1) and (h)(2) of this section.

(1) An annual site visit by the State and correction of all identified sanitary defects. The system may substitute a voluntary Level 2 assessment by a party approved by the State for the State annual site visit in any given year.

(2) The system must have in place or adopt one or more additional enhancements to the water system barriers to contamination in paragraphs (h)(2)(i) through (h)(2)(v) of this section.

(i) Cross connection control, as approved by the State.

(ii) An operator certified by an appropriate State certification program or regular visits by a circuit rider certified by an appropriate State certification program.

(iii) Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State.

(iv) Demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under §141.403(b)(3).

(v) Other equivalent enhancements to water system barriers as approved by the State.

(i) *Seasonal systems.* (1) Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for startup sampling prior to serving water to the public.

(2) A seasonal system must monitor every month that it is in operation unless it meets the criteria in paragraphs (i)(2)(i) through (iii) of this section to be eligible for monitoring less frequently than monthly beginning April 1, 2016, except as provided under paragraph (c) of this section.

(i) Seasonal systems monitoring less frequently than monthly must have an approved sample siting plan that designates the time period for monitoring based on site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). Seasonal systems must collect compliance samples during this time period.

(ii) To be eligible for quarterly monitoring, the system must meet the criteria in paragraph (g) of this section.

(iii) To be eligible for annual monitoring, the system must meet the criteria under paragraph (h) of this section.

(3) The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating, except that systems that monitor less frequently than monthly must still monitor during the vulnerable period designated by the State.

(j) *Additional routine monitoring the month following a total coliform-positive sample.* Systems collecting samples on a quarterly or annual frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). Systems must collect at least three routine samples during the next month, except that the State may waive this requirement if the conditions of paragraph (j)(1), (2), or (3) of this section are met. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations under §141.859(a).

(1) The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State, or an agent approved by the State, performs a site visit before the end of the next month in which the system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the State to determine whether additional monitoring and/or any corrective action is needed. The State cannot approve an employee of the system to perform this site visit, even if the employee is an agent approved by the State to perform sanitary surveys.

(2) The State may waive the requirement to collect three routine samples

the next month in which the system provides water to the public if the State has determined why the sample was total coliform-positive and has established that the system has corrected the problem or will correct the problem before the end of the next month in which the system serves water to the public. In this case, the State must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the State official who recommends such a decision, and make this document available to the EPA and public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the system has taken and/or will take to correct this problem.

(3) The State may not waive the requirement to collect three additional routine samples the next month in which the system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. If the State determines that the system has corrected the contamination problem before the system takes the set of repeat samples required in §141.858, and all repeat samples were total coliform-negative, the State may waive the requirement for additional routine monitoring the next month.

§141.855 Routine monitoring requirements for community water systems serving 1,000 or fewer people using only ground water.

(a) *General.* (1) The provisions of this section apply to community water systems using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving 1,000 or fewer people.

(2) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in §141.858.

(3) Once all monitoring required by this section and §141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in §141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by §141.859.

(b) *Monitoring frequency for total coliforms.* The monitoring frequency for total coliforms is one sample/month, except as provided for under paragraphs (c) through (f) of this section.

(c) *Transition to subpart Y.* (1) All systems must continue to monitor according to the total coliform monitoring schedules under §141.21 that were in effect on March 31, 2016, unless any of the conditions in paragraph (e) of this section are triggered on or after April 1, 2016, or unless otherwise directed by the State.

(2) Beginning April 1, 2016, the State must perform a special monitoring evaluation during each sanitary survey to review the status of the system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. After the State has performed the special monitoring evaluation during each sanitary survey, the State may modify the system's monitoring schedule, as necessary, or it may allow the system to stay on its existing monitoring schedule, consistent with the provisions of this section. The State may not allow systems to begin less frequent monitoring under the special monitoring evaluation unless the system has already met the applicable criteria for less frequent monitoring in this section.

(d) *Criteria for reduced monitoring.* (1) The State may reduce the monitoring frequency from monthly monitoring to no less than quarterly monitoring if the system is in compliance with State-certified operator provisions and demonstrates that it meets the criteria in paragraphs (d)(1)(i) through (d)(1)(iii) of this section. A system that loses its certified operator must return to monthly monitoring the month following that loss.

(i) The system has a clean compliance history for a minimum of 12 months.

(ii) The most recent sanitary survey shows the system is free of sanitary defects (or has an approved plan and schedule to correct them and is in compliance with the plan and the schedule), has a protected water source and

meets approved construction standards.

(iii) The system meets at least one of the following criteria:

(A) An annual site visit by the State that is equivalent to a Level 2 assessment or an annual Level 2 assessment by a party approved by the State and correction of all identified sanitary defects (or an approved plan and schedule to correct them and is in compliance with the plan and schedule).

(B) Cross connection control, as approved by the State.

(C) Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State.

(D) Demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under §141.403(b)(3).

(E) Other equivalent enhancements to water system barriers as approved by the State.

(2) [Reserved]

(e) *Return to routine monthly monitoring requirements.* Systems on quarterly monitoring that experience any of the events in paragraphs (e)(1) through (e)(4) of this section must begin monthly monitoring the month following the event. The system must continue monthly monitoring until it meets the reduced monitoring requirements in paragraph (d) of this section.

(1) The system triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period.

(2) The system has an *E. coli* MCL violation.

(3) The system has a coliform treatment technique violation.

(4) The system has two subpart Y monitoring violations in a rolling 12-month period.

(f) *Additional routine monitoring the month following a total coliform-positive sample.* Systems collecting samples on a quarterly frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). Systems must collect at least three routine samples during the next month, except that the State may waive this requirement if the conditions of paragraph (f)(1), (2), or (3) of this section are met. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations.

(1) The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State, or an agent approved by the State, performs a site visit before the end of the next month in which the system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the State to determine whether additional monitoring and/or any corrective action is needed. The State cannot approve an employee of the system to perform this site visit, even if the employee is an agent approved by the State to perform sanitary surveys.

(2) The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State has determined why the sample was total coliform-positive and has established that the system has corrected the problem or will correct the problem before the end of the next month in which the system serves water to the public. In this case, the State must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the State official who recommends such a decision, and make this document available to the EPA and the public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the system has taken and/or will take to correct this problem.

(3) The State may not waive the requirement to collect three additional routine samples the next month in which the system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. If the State determines that the

system has corrected the contamination problem before the system takes the set of repeat samples required in §141.858, and all repeat samples were total coliform-negative, the State may waive the requirement for additional routine monitoring the next month.

§141.856 Routine monitoring requirements for subpart H public water systems serving 1,000 or fewer people.

(a) *General.* (1) The provisions of this section apply to subpart H public water systems of this part serving 1,000 or fewer people.

(2) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in §141.858.

(3) Once all monitoring required by this section and §141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in §141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by §141.859.

(4) Seasonal systems. (i) Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for start-up sampling prior to serving water to the public.

(ii) The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.

(b) *Routine monitoring frequency for total coliforms.* Subpart H systems of this part (including consecutive systems) must monitor monthly. Systems may not reduce monitoring.

(c) *Unfiltered subpart H systems.* A subpart H system of this part that does not practice filtration in compliance with subparts H, P, T, and W must collect at least one total coliform sample near the first service connection each day the turbidity level of the source water, measured as specified in §141.74(b)(2), exceeds 1 NTU. When one or more turbidity measurements in any day exceed 1 NTU, the system must collect this coliform sample within 24 hours of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection and identifies an alternative sample collection schedule. Sample results from this coliform monitoring must be included in determining whether the coliform treatment technique trigger in §141.859 has been exceeded.

§141.857 Routine monitoring requirements for public water systems serving more than 1,000 people.

(a) *General.* (1) The provisions of this section apply to public water systems serving more than 1,000 persons.

(2) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in §141.858.

(3) Once all monitoring required by this section and §141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in §141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by §141.859.

(4) *Seasonal systems.* (i) Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for start-up sampling prior to serving water to the public.

(ii) The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.

(b) *Monitoring frequency for total coliforms.* The monitoring frequency for total coliforms is based on the population served by the system, as follows:

TOTAL COLIFORM MONITORING FREQUENCY FOR PUBLIC WATER SYSTEMS SERVING MORE THAN 1,000 PEOPLE

Population served	Minimum number of samples per month
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

(c) *Unfiltered subpart H systems.* A subpart H system of this part that does not practice filtration in compliance with subparts H, P, T, and W must collect at least one total coliform sample near the first service connection each day the turbidity level of the source water, measured as specified in §141.74(b)(2), exceeds 1 NTU. When one or more turbidity measurements in any day exceed 1 NTU, the system must collect this coliform sample within 24 hours of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection and identifies an alternative sample collection schedule. Sample results from this coliform monitoring must be included in determining whether the coliform treatment technique trigger in §141.859 has been exceeded.

(d) *Reduced monitoring.* Systems may not reduce monitoring, except for non-community water systems using only ground water (and not ground water under the direct influence of surface water) serving 1,000 or fewer people in some months and more than 1,000 persons in other months. In months when more than 1,000 persons are served, the systems must monitor at the frequency specified in paragraph (a) of this section. In months when 1,000 or fewer people are served, the State may reduce the monitoring frequency, in writing, to a frequency allowed under §141.854 for a similarly situated system that always serves 1,000 or fewer people, taking into account the provisions in §141.854(e) through (g).

§141.858 Repeat monitoring and *E. coli* requirements.

(a) *Repeat monitoring.* (1) If a sample taken under §§141.854 though 141.857 is total coliform-positive, the system must collect a set of repeat samples within 24 hours of being notified of the positive result. The system must collect no fewer than three repeat samples for each total coliform-positive sample found. The State may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. Alternatively, the State may implement criteria for the system to use in lieu of case-by-case extensions. In the case of an extension, the State must specify how much time the system has to collect the repeat samples. The State cannot waive the requirement for a system to collect repeat samples in paragraphs (a)(1) through (a)(3) of this section.

(2) The system must collect all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a three-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 ml.

(3) The system must collect an additional set of repeat samples in the manner specified in paragraphs (a)(1) through (a)(3) of this section if one or more repeat samples in the current set of repeat samples is total coliform-positive. The system must collect the additional set of repeat samples within

24 hours of being notified of the positive result, unless the State extends the limit as provided in paragraph (a)(1) of this section. The system must continue to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in §141.859(a) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the State. If a trigger identified in §141.859 is exceeded as a result of a routine sample being total coliform-positive, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.

(4) After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.

(5) Results of all routine and repeat samples taken under §§141.854 through 141.858 not invalidated by the State must be used to determine whether a coliform treatment technique trigger specified in §141.859 has been exceeded.

(b) *Escherichia coli (E. coli) testing.* (1) If any routine or repeat sample is total coliform-positive, the system must analyze that total coliform-positive culture medium to determine if *E. coli* are present. If *E. coli* are present, the system must notify the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.

(2) The State has the discretion to allow a system, on a case-by-case basis, to forgo *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is *E. coli*-positive. Accordingly, the system must notify the State as specified in paragraph (b)(1) of this section and the provisions of §141.63(c) apply.

§141.859 Coliform treatment technique triggers and assessment requirements for protection against potential fecal contamination.

(a) *Treatment technique triggers.* Systems must conduct assessments in accordance with paragraph (b) of this section after exceeding treatment technique triggers in paragraphs (a)(1) and (a)(2) of this section.

(1) Level 1 treatment technique triggers.

(i) For systems taking 40 or more samples per month, the system exceeds 5.0% total coliform-positive samples for the month.

(ii) For systems taking fewer than 40 samples per month, the system has two or more total coliform-positive samples in the same month.

(iii) The system fails to take every required repeat sample after any single total coliform-positive sample.

(2) Level 2 treatment technique triggers.

(i) An *E. coli* MCL violation, as specified in §141.860(a).

(ii) A second Level 1 trigger as defined in paragraph (a)(1) of this section, within a rolling 12-month period, unless the State has determined a likely reason that the samples that caused the first Level 1 treatment technique trigger were total coliform-positive and has established that the system has corrected the problem.

(iii) For systems with approved annual monitoring, a Level 1 trigger in two consecutive years.

(b) *Requirements for assessments.* (1) Systems must ensure that Level 1 and 2 assessments are conducted in order to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices. Level 2 assessments must be conducted by parties approved by the State.

(2) When conducting assessments, systems must ensure that the assessor evaluates minimum elements that include review and identification of inadequacies in sample sites; sampling protocol; sample processing; atypical events that could affect distributed water quality or indicate that distributed water quality was impaired;

changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., small ground water systems); and existing water quality monitoring data. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.

(3) *Level 1 assessments.* A system must conduct a Level 1 assessment consistent with State requirements if the system exceeds one of the treatment technique triggers in paragraph (a)(1) of this section.

(i) The system must complete a Level 1 assessment as soon as practical after any trigger in paragraph (a)(1) of this section. In the completed assessment form, the system must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. The assessment form may also note that no sanitary defects were identified. The system must submit the completed Level 1 assessment form to the State within 30 days after the system learns that it has exceeded a trigger.

(ii) If the State reviews the completed Level 1 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the State must consult with the system. If the State requires revisions after consultation, the system must submit a revised assessment form to the State on an agreed-upon schedule not to exceed 30 days from the date of the consultation.

(iii) Upon completion and submission of the assessment form by the system, the State must determine if the system has identified a likely cause for the Level 1 trigger and, if so, establish that the system has corrected the problem, or has included a schedule acceptable to the State for correcting the problem.

(4) *Level 2 assessments.* A system must ensure that a Level 2 assessment consistent with State requirements is conducted if the system exceeds one of the treatment technique triggers in paragraph (a)(2) of this section. The system must comply with any expedited actions or additional actions required by the State in the case of an *E. coli* MCL violation.

(i) The system must ensure that a Level 2 assessment is completed by the State or by a party approved by the State as soon as practical after any trigger in paragraph (a)(2) of this section. The system must submit a completed Level 2 assessment form to the State within 30 days after the system learns that it has exceeded a trigger. The assessment form must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. The assessment form may also note that no sanitary defects were identified.

(ii) The system may conduct Level 2 assessments if the system has staff or management with the certification or qualifications specified by the State unless otherwise directed by the State.

(iii) If the State reviews the completed Level 2 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the State must consult with the system. If the State requires revisions after consultation, the system must submit a revised assessment form to the State on an agreed-upon schedule not to exceed 30 days.

(iv) Upon completion and submission of the assessment form by the system, the State must determine if the system has identified a likely cause for the Level 2 trigger and determine whether the system has corrected the problem, or has included a schedule acceptable to the State for correcting the problem.

(c) *Corrective action.* Systems must correct sanitary defects found through either Level 1 or 2 assessments conducted under paragraph (b) of this section. For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the State in consultation with the system. The

system must notify the State when each scheduled corrective action is completed.

(d) *Consultation.* At any time during the assessment or corrective action phase, either the water system or the State may request a consultation with the other party to determine the appropriate actions to be taken. The system may consult with the State on all relevant information that may impact on its ability to comply with a requirement of this subpart, including the method of accomplishment, an appropriate timeframe, and other relevant information.

§ 141.860 Violations.

(a) *E. coli MCL Violation.* A system is in violation of the MCL for *E. coli* when any of the conditions identified in paragraphs (a)(1) through (a)(4) of this section occur.

(1) The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

(2) The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample.

(3) The system fails to take all required repeat samples following an *E. coli*-positive routine sample.

(4) The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.

(b) *Treatment technique violation.* (1) A treatment technique violation occurs when a system exceeds a treatment technique trigger specified in §141.859(a) and then fails to conduct the required assessment or corrective actions within the timeframe specified in §141.859(b) and (c).

(2) A treatment technique violation occurs when a seasonal system fails to complete a State-approved start-up procedure prior to serving water to the public.

(c) *Monitoring violations.* (1) Failure to take every required routine or additional routine sample in a compliance period is a monitoring violation.

(2) Failure to analyze for *E. coli* following a total coliform-positive routine sample is a monitoring violation.

(d) *Reporting violations.* (1) Failure to submit a monitoring report or completed assessment form after a system properly conducts monitoring or assessment in a timely manner is a reporting violation.

(2) Failure to notify the State following an *E. coli*-positive sample as required by §141.858(b)(1) in a timely manner is a reporting violation.

(3) Failure to submit certification of completion of State-approved start-up procedure by a seasonal system is a reporting violation.

§ 141.861 Reporting and recordkeeping.

(a) *Reporting*—(1) *E. coli.* (i) A system must notify the State by the end of the day when the system learns of an *E. coli* MCL violation, unless the system learns of the violation after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day, and notify the public in accordance with subpart Q of this part.

(ii) A system must notify the State by the end of the day when the system is notified of an *E. coli*-positive routine sample, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.

(2) A system that has violated the treatment technique for coliforms in §141.859 must report the violation to the State no later than the end of the next business day after it learns of the violation, and notify the public in accordance with subpart Q of this part.

(3) A system required to conduct an assessment under the provisions of §141.859 of this part must submit the assessment report within 30 days. The system must notify the State in accordance with §141.859(c) when each scheduled corrective action is completed for corrections not completed by the time of submission of the assessment form.

(4) A system that has failed to comply with a coliform monitoring requirement must report the monitoring violation to the State within 10 days

after the system discovers the violation, and notify the public in accordance with subpart Q of this part.

(5) A seasonal system must certify, prior to serving water to the public, that it has complied with the State-approved start-up procedure.

(b) *Recordkeeping.* (1) The system must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken under §141.859 for State review. This record must be maintained by the system for a period not less than five years after completion of the assessment or corrective action.

(2) The system must maintain a record of any repeat sample taken that meets State criteria for an extension of the 24-hour period for collecting repeat samples as provided for under §141.858(a)(1) of this part.

[78 FR 10354, Feb. 13, 2013, as amended at 79 FR 10670, Feb. 26, 2014]

PART 142—NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION

Subpart A—General Provisions

Sec.

Subpart B—Primary Enforcement Responsibility

Subpart C—Review of State-Issued Variances and Exemptions

Subpart D—Federal Enforcement

Subpart E—Variances Issued by the Administrator Under Section 1415(a) of the Act

Subpart F—Exemptions Issued by the Administrator

Subpart G—Identification of Best Technology, Treatment Techniques or Other Means Generally Available

AUTHORITY: 42 U.S.C. 300f, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–4, 300j–9, and 300j–11.

SOURCE: 41 FR 2918, Jan. 20, 1976, unless otherwise noted.

Subpart A—General Provisions

§ 142.1 Applicability.

This part sets forth, pursuant to sections 1413 through 1416, 1445, and 1450 of the Public Health Service Act, as amended by the Safe Drinking Water Act, Public Law 93–523, regulations for the implementation and enforcement of the national primary drinking water regulations contained in part 141 of this chapter.

§ 142.2 Definitions.

As used in this part, and except as otherwise specifically provided:

Act means the Public Health Service Act.

Administrator means the Administrator of the United States Environmental Protection Agency or his authorized representative.

Agency means the United States Environmental Protection Agency.

Approved State primacy program consists of those program elements listed in §142.11(a) that were submitted with the initial State application for primary enforcement authority and approved by the EPA Administrator and all State program revisions thereafter that were approved by the EPA Administrator.

Contaminant means any physical, chemical, biological, or radiological substance or matter in water.

Federal agency means any department, agency, or instrumentality of the United States.

Indian Tribe means any Indian Tribe having a Federally recognized governing body carrying out substantial governmental duties and powers over a defined area.

Interstate Agency means an agency of two or more States established by or under an agreement or compact approved by the Congress, or any other agency of two or more States or Indian Tribes having substantial powers or duties pertaining to the control of pollution as determined and approved by the Administrator.

Maximum contaminant level means the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system; except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except for those resulting from corrosion of piping and plumbing caused by water quality are excluded from this definition.

Municipality means a city, town, or other public body created by or pursuant to State law, or an Indian Tribe which does not meet the requirements of subpart H of this part.

National primary drinking water regulation means any primary drinking water regulation contained in part 141 of this chapter.

Person means an individual; corporation; company; association; partnership; municipality; or State, federal, or Tribal agency.

Primary enforcement responsibility means the primary responsibility for administration and enforcement of primary drinking water regulations and related requirements applicable to public water systems within a State.

Public water system or *PWS* means a system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes:

Any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any "special irrigation district." A public water system is either a "community water system" or a "noncommunity water system" as defined in § 141.2.

Sanitary survey means an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.

Service connection, as used in the definition of *public water system,* does not include a connection to a system that delivers water by a constructed conveyance other than a pipe if:

(1) The water is used exclusively for purposes other than residential uses (consisting of drinking, bathing, and cooking, or other similar uses);

(2) The Administrator or the State exercising primary enforcement responsibility for public water systems, determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for residential or similar uses for drinking and cooking; or

(3) The Administrator or the State exercising primary enforcement responsibility for public water systems, determines that the water provided for residential or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

Special irrigation district means an irrigation district in existence prior to May 18, 1994 that provides primarily agricultural service through a piped water system with only incidental residential or similar use where the system or the residential or similar users of the system comply with the exclusion provisions in section 1401(4)(B)(i)(II) or (III).

State means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American

Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an eligible Indian tribe.

State primary drinking water regulation means a drinking water regulation of a State which is comparable to a national primary drinking water regulation.

State program revision means a change in an approved State primacy program.

Supplier of water means any person who owns or operates a public water system.

Treatment technique requirement means a requirement of the national primary drinking water regulations which specifies for a contaminant a specific treatment technique(s) known to the Administrator which leads to a reduction in the level of such contaminant sufficient to comply with the requirements of part 141 of this chapter.

[41 FR 2918, Jan. 20, 1976, as amended at 53 FR 37410, Sept. 26, 1988; 54 FR 52137, Dec. 20, 1989; 59 FR 64344, Dec. 14, 1994; 63 FR 23367, Apr. 28, 1998]

§ 142.3 Scope.

(a) Except where otherwise provided, this part applies to each public water system in each State; except that this part shall not apply to a public water system which meets all of the following conditions:

(1) Which consists only of distribution and storage facilities (and does not have any collection and treatment facilities);

(2) Which obtains all of its water from, but is not owned or operated by, a public water system to which such regulations apply;

(3) Which does not sell water to any person; and

(4) Which is not a carrier which conveys passengers in interstate commerce.

(b) In order to qualify for primary enforcement responsibility, a State's program for enforcement of primary drinking water regulations must apply to all other public water systems in the State, except for:

(1) Public water systems on carriers which convey passengers in interstate commerce;

(2) Public water systems on Indian land with respect to which the State does not have the necessary jurisdiction or its jurisdiction is in question; or

(c) Section 1451 of the SDWA authorizes the Administrator to delegate primary enforcement responsibility for public water systems to Indian Tribes. An Indian Tribe must meet the statutory criteria at 42 U.S.C. 300j–11(b)(1) before it is eligible to apply for Public Water System Supervision grants and primary enforcement responsibility. All primary enforcement responsibility requirements of parts 141 and 142 apply to Indian Tribes except where specifically noted.

[41 FR 2918, Jan. 20, 1976, as amended at 53 FR 37410, Sept. 26, 1988; 59 FR 64344, Dec. 14, 1994; 67 FR 70858, Nov. 27, 2002]

§ 142.4 State and local authority.

Nothing in this part shall diminish any authority of a State or political subdivision to adopt or enforce any law or regulation respecting drinking water regulations or public water systems, but no such law or regulation shall relieve any person of any requirements otherwise applicable under this part.

Subpart B—Primary Enforcement Responsibility

§ 142.10 Requirements for a determination of primary enforcement responsibility.

A State has primary enforcement responsibility for public water systems in the State during any period for which the Administrator determines, based upon a submission made pursuant to §142.11, and submission under §142.12, that such State, pursuant to appropriate State legal authority:

(a) Has adopted drinking water regulations which are no less stringent than the national primary drinking water regulations (NPDWRs) in effect under part 141 of this chapter;

(b) Has adopted and is implementing adequate procedures for the enforcement of such State regulations, such procedures to include:

(1) Maintenance of an inventory of public water systems.

(2) A systematic program for conducting sanitary surveys of public

water systems in the State, with priority given to sanitary surveys of public water systems not in compliance with State primary drinking water regulations.

(3)(i) The establishment and maintenance of a State program for the certification of laboratories conducting analytical measurements of drinking water contaminants pursuant to the requirements of the State primary drinking water regulations including the designation by the State of a laboratory officer, or officers, certified by the Administrator, as the official(s) responsible for the State's certification program. The requirements of this paragraph may be waived by the Administrator for any State where all analytical measurements required by the State's primary drinking water regulations are conducted at laboratories operated by the State and certified by the Agency. Until such time as the Agency establishes a National quality assurance program for laboratory certification the State shall maintain an interim program for the purpose of approving those laboratories from which the required analytical measurements will be acceptable.

(ii) Upon a showing by an Indian Tribe of an intergovernmental or other agreement to have all analytical tests performed by a certified laboratory, the Administrator may waive this requirement.

(4) Assurance of the availability to the State of laboratory facilities certified by the Administrator and capable of performing analytical measurements of all contaminants specified in the State primary drinking water regulations. Until such time as the Agency establishes a National quality assurance program for laboratory certification the Administrator will approve such State laboratories on an interim basis.

(5) The establishment and maintenance of an activity to assure that the design and construction of new or substantially modified public water system facilities will be capable of compliance with the State primary drinking water regulations.

(6) Statutory or regulatory enforcement authority adequate to compel compliance with the State primary drinking water regulations in appropriate cases, such authority to include:

(i) Authority to apply State primary drinking water regulations to all public water systems in the State covered by the national primary drinking water regulations, except for interstate carrier conveyances and systems on Indian land with respect to which the State does not have the necessary jurisdiction or its jurisdiction is in question.

(ii) Authority to sue in courts of competent jurisdiction to enjoin any threatened or continuing violation of the State primary drinking water regulations.

(iii) Right of entry and inspection of public water systems, including the right to take water samples, whether or not the State has evidence that the system is in violation of an applicable legal requirement.

(iv) Authority to require suppliers of water to keep appropriate records and make appropriate reports to the State.

(v) Authority to require public water systems to give public notice that is no less stringent than the EPA requirements in subpart Q of part 141 of this chapter and §142.16(a).

(vi) Authority to assess civil or criminal penalties for violation of the State's primary drinking water regulations and public notification requirements, including the authority to assess daily penalties or multiple penalties when a violation continues;

(vii) Authority to require community water systems to provide consumer confidence reports as required under 40 CFR part 141, subpart O.

(c) Has established and will maintain record keeping and reporting of its activities under paragraphs (a), (b) and (d) in compliance with §§142.14 and 142.15;

(d) *Variances and exemptions.* (1) If it permits small system variances pursuant to Section 1415(e) of the Act, it must provide procedures no less stringent than the Act and Subpart K of this part.

(2) If it permits variances (other than small system variances) or exemptions, or both, from the requirements of the State primary drinking water regulations, it shall do so under conditions and in a manner no less stringent than

the requirements of Sections 1415 and 1416 of the Act. In granting these variances, the State must adopt the Administrator's findings of best available technology, treatment techniques, or other means available as specified in Subpart G of this part. (States with primary enforcement responsibility may adopt procedures different from those set forth in Subparts E and F of this part, which apply to the issuance of variances (other than small system variances) and exemptions by the Administrator in States that do not have primary enforcement responsibility, provided that the State procedures meet the requirements of this paragraph); and

(e) Has adopted and can implement an adequate plan for the provision of safe drinking water under emergency circumstances including, but not limited to, earthquakes, floods, hurricanes, and other natural disasters.

(f)(1) Has adopted authority for assessing administrative penalties unless the constitution of the State prohibits the adoption of such authority. For public water systems serving a population of more than 10,000 individuals, States must have the authority to impose a penalty of at least $1,000 per day per violation. For public water systems serving a population of 10,000 or fewer individuals, States must have penalties that are adequate to ensure compliance with the State regulations as determined by the State.

(2) As long as criteria in paragraph (f)(1) of this section are met, States may establish a maximum administrative penalty per violation that may be assessed on a public water system.

(g) Has adopted regulations consistent with 40 CFR part 3—(Electronic reporting) if the state receives electronic documents.

(h) An Indian Tribe shall not be required to exercise criminal enforcement jurisdiction to meet the requirements for primary enforcement responsibility.

[41 FR 2918, Jan. 20, 1976, as amended at 43 FR 5373, Feb. 8, 1978; 52 FR 20675, June 2, 1987; 52 FR 41550, Oct. 28, 1987; 53 FR 37410, Sept. 26, 1988; 54 FR 15188, Apr. 17, 1989; 54 FR 52138, Dec. 20, 1989; 63 FR 23367, Apr. 28, 1998; 63 FR 43846, Aug. 14, 1998; 63 FR 44535, Aug. 19, 1998; 65 FR 26048, May 4, 2000; 70 FR 59888, Oct. 13, 2005]

§ 142.11 Initial determination of primary enforcement responsibility.

(a) A State may apply to the Administrator for a determination that the State has primary enforcement responsibility for public water systems in the State pursuant to section 1413 of the Act. The application shall be as concise as possible and include a side-by-side comparison of the Federal requirements and the corresponding State authorities, including citations to the specific statutes and administrative regulations or ordinances and, wherever appropriate, judicial decisions which demonstrate adequate authority to meet the requirements of §142.10. The following information is to be included with the State application.

(1) The text of the State's primary drinking water regulations, with references to those State regulations that vary from comparable regulations set forth in part 141 of this chapter, and a demonstration that any different State regulation is at least as stringent as the comparable regulation contained in part 141.

(2) A description, accompanied by appropriate documentation, of the State's procedures for the enforcement of the State primary drinking water regulations. The submission shall include:

(i) A brief description of the State's program to maintain a current inventory of public water systems.

(ii) A brief description of the State's program for conducting sanitary surveys, including an explanation of the priorities given to various classes of public water systems.

(iii) A brief description of the State's laboratory approval or certification program, including the name(s) of the responsible State laboratory officer(s) certified by the Administrator.

(iv) Identification of laboratory facilities, available to the State, certified or approved by the Administrator and capable of performing analytical measurements of all contaminants specified in the State's primary drinking water regulations.

(v) A brief description of the State's program activity to assure that the design and construction of new or substantially modified public water system facilities will be capable of compliance with the requirements of the State primary drinking water regulations.

(vi) Copies of State statutory and regulatory provisions authorizing the adoption and enforcement of State primary drinking water regulations, and a brief description of State procedures for administrative or judicial action with respect to public water systems not in compliance with such regulations.

(3) A statement that the State will make such reports and will keep such records as may be required pursuant to §§ 142.14 and 142.15.

(4) If the State permits variances or exemptions from its primary drinking water regulations, the text of the State's statutory and regulatory provisions concerning variances and exemptions.

(5) A brief description of the State's plan for the provision of safe drinking water under emergency conditions.

NOTE: In satisfaction of this requirement, for public water supplies from groundwater sources, EPA will accept the contingency plan for providing alternate drinking water supplies that is part of a State's Wellhead Protection Program, where such program has been approved by EPA pursuant to section 1428 of the SDWA.

(6)(i) A copy of the State statutory and regulatory provisions authorizing the executive branch of the State government to impose an administrative penalty on all public water systems, and a brief description of the State's authority for administrative penalties that will ensure adequate compliance of systems serving a population of 10,000 or fewer individuals.

(ii) In instances where the State constitution prohibits the executive branch of the State government from assessing any penalty, the State shall submit a copy of the applicable part of its constitution and a statement from its Attorney General confirming this interpretation.

(7)(i) A statement by the State Attorney General (or the attorney for the State primacy agency if it has independent legal counsel) or the attorney representing the Indian tribe that certifies that the laws and regulations adopted by the State or tribal ordinances to carry out the program were duly adopted and are enforceable. State statutes and regulations cited by the State Attorney General and tribal ordinances cited by the attorney representing the Indian tribe shall be in the form of lawfully adopted State statutes and regulations or tribal ordinances at the time the certification is made and shall be fully effective by the time the program is approved by EPA. To qualify as "independent legal counsel," the attorney signing the statement required by this section shall have full authority to independently represent the State primacy agency or Indian tribe in court on all matters pertaining to the State or tribal program.

(ii) After EPA has received the documents required under paragraph (a) of this section, EPA may selectively require supplemental statements by the State Attorney General (or the attorney for the State primacy agency if it has independent legal counsel) or the attorney representing the Indian tribe. Each supplemental statement shall address all issues concerning the adequacy of State authorities to meet the requirements of § 142.10 that have been identified by EPA after thorough examination as unresolved by the documents submitted under paragraph (a) of this section.

(b)(1) The administrator shall act on an application submitted pursuant to § 142.11 within 90 days after receiving such application, and shall promptly inform the State in writing of this action. If he denies the application, his written notification to the State shall include a statement of reasons for the denial.

(2) A final determination by the Administrator that a State has met or has not met the requirements for primary enforcement responsibility shall take effect in accordance with the public notice requirements and related procedures under § 142.13.

(3) When the Administrator's determination becomes effective pursuant

to §142.13, it shall continue in effect unless terminated pursuant to §142.17.

[41 FR 2918, Jan. 20, 1976, as amended at 54 FR 52138, Dec. 20, 1989; 60 FR 33661, June 28, 1995; 63 FR 23367, Apr. 28, 1998]

§ 142.12 Revision of State programs.

(a) *General requirements.* Either EPA or the primacy State may initiate actions that require the State to revise its approved State primacy program. To retain primary enforcement responsibility, States must adopt all new and revised national primary drinking water regulations promulgated in part 141 of this chapter and any other requirements specified in this part.

(1) Whenever a State revises its approved primacy program to adopt new or revised Federal regulations, the State must submit a request to the Administrator for approval of the program revision, using the procedures described in paragraphs (b), (c), and (d) of this section. The Administrator shall approve or disapprove each State request for approval of a program revision based on the requirements of the Safe Drinking Water Act and of this part.

(2) For all State program revisions not covered under §142.12(a)(1), the review procedures outlined in §142.17(a) shall apply.

(b) *Timing of State requests for approval of program revisions to adopt new or revised Federal regulations.* (1) Complete and final State requests for approval of program revisions to adopt new or revised EPA regulations must be submitted to the Administrator not later than 2 years after promulgation of the new or revised EPA regulations, unless the State requests an extension and the Administrator has approved the request pursuant to paragraph (b)(2) of this section. If the State expects to submit a final State request for approval of a program revision to EPA more than 2 years after promulgation of the new or revised EPA regulations, the State shall request an extension of the deadline before the expiration of the 2-year period.

(2) The final date for submission of a complete and final State request for a program revision may be extended by EPA for up to a two-year period upon a written application by the State to the Administrator. In the extension application the State must demonstrate it is requesting the extension because it cannot meet the original deadline for reasons beyond its control despite a good faith effort to do so. The application must include a schedule for the submission of a final request by a certain time and provide sufficient information to demonstrate that the State:

(i)(A) Currently lacks the legislative or regulatory authority to enforce the new or revised requirements, or

(B) Currently lacks the program capability adequate to implement the new or revised requirements; or

(C) Is requesting the extension to group two or more program revisions in a single legislative or regulatory action; and

(ii) Is implementing the EPA requirements to be adopted by the State in its program revision pursuant to paragraph (b)(3) of this section within the scope of its current authority and capabilities.

(3) To be granted an extension, the State must agree with EPA to meet certain requirements during the extension period, which may include the following types of activities as determined appropriate by the Administrator on a case-by-case basis:

(i) Informing public water systems of the new EPA (and upcoming State) requirements and that EPA will be overseeing implementation of the requirements until the State, if eligible for interim primacy, submits a complete and final primacy revision request to EPA, or in all other cases, until EPA approves the State program revision;

(ii) Collecting, storing and managing laboratory results, public notices, and other compliance and operation data required by the EPA regulations;

(iii) Assisting EPA in the development of the technical aspects of enforcement actions and conducting informal follow-up on violations (telephone calls, letters, etc.);

(iv) Providing technical assistance to public water systems;

(v) Providing EPA with all information prescribed by §142.15 of this part on State reporting; and

(vi) For States whose request for an extension is based on a current lack of

program capability adequate to implement the new requirements, taking steps agreed to by EPA and the State during the extension period to remedy the deficiency.

(c) *Contents of a State request for approval of a program revision.* (1) The State request for EPA approval of a program revision shall be concise and must include:

(i) The documentation necessary (pursuant to §142.11(a)) to update the approved State primacy program, and identification of those elements of the approved State primacy program that have not changed because of the program revision. The documentation shall include a side-by-side comparison of the Federal requirements and the corresponding State authorities, including citations to the specific statutes and administrative regulations or ordinances and, wherever appropriate, judicial decisions which demonstrate adequate authority to meet the requirements of §142.10 as they apply to the program revision.

(ii) Any additional materials that are listed in §142.16 of this part for a specific EPA regulation, as appropriate; and

(iii) For a complete and final State request only, unless one of the conditions listed in paragraph (c)(2) of this section are met, a statement by the State Attorney General (or the attorney for the State primacy agency if it has independent legal counsel) or the attorney representing the Indian tribe that certifies that the laws and regulations adopted by the State or tribal ordinances to carry out the program revision were duly adopted and are enforceable. State statutes and regulations cited by the State Attorney General and tribal ordinances cited by the attorney for the Indian tribe shall be in the form of lawfully adopted State statutes and regulations or tribal ordinances at the time the certification is made and shall be fully effective by the time the request for program revision is approved by EPA. To qualify as "independent legal counsel," the attorney signing the statement required by this section shall have full authority to independently represent the State primacy agency or tribe in court on all matters pertaining to the State or tribal program.

(2) An Attorney General's statement will be required as part of the State request for EPA approval of a program revision unless EPA specifically waives this requirement for a specific regulation at the time EPA promulgates the regulation, or by later written notice from the Administrator to the State.

(3) After EPA has received the documents required under paragraph (c)(1) of this section, EPA may selectively require supplemental statements by the State Attorney General (or the attorney for the State primacy agency if it has independent legal counsel) or the attorney representing the Indian tribe. Each supplemental statement shall address all issues concerning the adequacy of State authorities to meet the requirements of §142.10 that have been identified by EPA after thorough examination as unresolved by the documents submitted under paragraph (c)(1) of this section.

(d) *Procedures for review of a State request for approval of a program revision*—(1) *Preliminary request.* (i) The State may submit to the Administrator for his or her review a preliminary request for approval of each program revision, containing the information listed in paragraph (c)(1) of this section, *in draft form.* The preliminary request does not require an Attorney General's statement in draft form, but does require draft State statutory or regulatory changes and a side-by-side comparison of State authorities with EPA requirements to demonstrate that the State program revision meets EPA requirements under §142.10 of this part. The preliminary request should be submitted to the Administrator as soon as practicable after the promulgation of the EPA regulations.

(ii) The Administrator will review the preliminary request submitted in accordance with paragraph (d)(1)(i) of this section and make a tentative determination on the request. The Administrator will send the tentative determination and other comments or suggestions to the State for its use in developing the State's final request under paragraph (d)(2) of this section.

(2) *Final request.* The State must submit a complete and final request for

approval of a program revision to the Administrator for his or her review and approval. The request must contain the information listed in paragraph (c)(1) of this section *in complete and final form,* in accordance with any tentative determination EPA may have issued. Complete and final State requests for program revisions shall be submitted within two years of the promulgation of the new or revised EPA regulations, as specified in paragraph (b) of this section.

(3) *EPA's determination on a complete and final request.* (i) The Administrator shall act on a State's request for approval of a program revision within 90 days after determining that the State request is complete and final and shall promptly notify the State of his/her determination.

(ii) If the Administrator disapproves a final request for approval of a program revision, the Administrator will notify the State in writing. Such notification will include a statement of the reasons for disapproval.

(iii) A final determination by the Administrator on a State's request for approval of a program revision shall take effect in accordance with the public notice requirements and related procedures under §142.13.

(e) *Interim primary enforcement authority.* A State with an approved primacy program for each existing national primary drinking water regulation shall be considered to have interim primary enforcement authority with respect to each new or revised national drinking water regulation that it adopts beginning when the new or revised State regulation becomes effective or when the complete primacy revision application is submitted to the Administrator, whichever is later, and shall end when the Administrator approves or disapproves the State's revised primacy program.

[54 FR 52138, Dec. 20, 1989, as amended at 63 FR 23367, Apr. 28, 1998; 66 FR 3780, Jan. 16, 2001]

§142.13 Public hearing.

(a) The Administrator shall provide an opportunity for a public hearing before a final determination pursuant to §142.11 that the State meets or does not meet the requirements for obtaining primary enforcement responsibility, or a final determination pursuant to §142.12(d)(3) to approve or disapprove a State request for approval of a program revision, or a final determination pursuant to §142.17 that a State no longer meets the requirements for primary enforcement responsibility.

(b) The Administrator shall publish notice of any determination specified in paragraph (a) of this section in the FEDERAL REGISTER and in a newspaper or newspapers of general circulation in the State involved within 15 days after making such determination, with a statement of his reasons for the determination. Such notice shall inform interested persons that they may request a public hearing on the Administrator's determination. Such notice shall also indicate one or more locations in the State where information submitted by the State pursuant to §142.11 is available for inspection by the general public. A public hearing may be requested by any interested person other than a Federal agency. Frivolous or insubstantial requests for hearing may be denied by the Administrator.

(c) Requests for hearing submitted pursuant to paragraph (b) of this section shall be submitted to the Administrator within 30 days after publication of notice of opportunity for hearing in the FEDERAL REGISTER. Such requests shall include the following information:

(1) The name, address and telephone number of the individual, organization or other entity requesting a hearing.

(2) A brief statement of the requesting person's interest in the Administrator's determination and of information that the requesting person intends to submit at such hearing.

(3) The signature of the individual making the request; or, if the request is made on behalf of an organization or other entity, the signature of a responsible official of the organization or other entity.

(d) The Administrator shall give notice in the FEDERAL REGISTER and in a newspaper or newspapers of general circulation in the State involved of any hearing to be held pursuant to a request submitted by an interested person or on his own motion. Notice of the hearing shall also be sent to the person

requesting a hearing, if any, and to the State involved. Notice of the hearing shall include a statement of the purpose of the hearing, information regarding the time and location or locations for the hearing and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing. At least one hearing location specified in the public notice shall be within the involved State. Notice of hearing shall be given not less than 15 days prior to the time scheduled for the hearing.

(e) Hearings convened pursuant to paragraph (d) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly and expeditious manner. The hearing officer shall have authority to call witnesses, receive oral and written testimony and take such other action as may be necessary to assure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer shall forward the record of the hearing to the Administrator.

(f) After reviewing the record of the hearing, the Administrator shall issue an order affirming the determination referred to in paragraph (a) of this section or rescinding such determination. If the determination is affirmed, it shall become effective as of the date of the Administrator's order.

(g) If no timely request for hearing is received and the Administrator does not determine to hold a hearing on his own motion, the Administrator's determination shall become effective 30 days after notice is issued pursuant to paragraph (b) of this section.

(h) If a determination of the Administrator that a State no longer meets the requirements for primary enforcement responsibility becomes effective, the State may subsequently apply for a determination that it meets such requirements by submitting to the Administrator information demonstrating that it has remedied the deficiencies found by the Administrator without adversely sacrificing other aspects of its program required for primary enforcement responsibility.

[41 FR 2918, Jan. 20, 1976, as amended at 54 FR 52140, Dec. 20, 1989; 60 FR 33661, June 28, 1995]

§ 142.14 Records kept by States.

(a) Each State which has primary enforcement responsibility shall maintain records of tests, measurements, analyses, decisions, and determinations performed on each public water system to determine compliance with applicable provisions of State primary drinking water regulations.

(1) Records of microbiological analyses shall be retained for not less than 1 year. Actual laboratory reports may be kept or data may be transferred to tabular summaries, provided that the information retained includes:

(i) The analytical method used;

(ii) The number of samples analyzed each month;

(iii) The analytical results, set forth in a form that makes possible comparison with the limits specified in §§ 141.63, 141.71, and 141.72 of this chapter and with the limits specified in subpart Y of this chapter.

(2) Records of microbiological analyses of repeat or special samples shall be retained for not less than one year in the form of actual laboratory reports or in an appropriate summary form.

(3) Records of turbidity measurements must be kept for not less than one year. The information retained must be set forth in a form which makes possible comparison with the limits specified in §§ 141.71, 141.73, 141.173 and 141.175, 141.550–141.553 and 141.560–141.564 of this chapter. Until June 29, 1993, for any public water system which is providing filtration treatment and until December 30, 1991, for any public water system not providing filtration treatment and not required by the State to provide filtration treatment, records kept must be set forth in a form which makes possible comparison with the limits contained in § 141.13 of this chapter.

(4)(i) Records of disinfectant residual measurements and other parameters necessary to document disinfection effectiveness in accordance with §§ 141.72

and 141.74 of this chapter and the reporting requirements of §§141.75, 141.175, and 141.570, of this chapter must be kept for not less than one year.

(ii) Records of decisions made on a system-by-system and case-by-case basis under provisions of part 141, subpart H, subpart P, or subpart T of this chapter, must be made in writing and kept by the State.

(A) Records of decisions made under the following provisions shall be kept for 40 years (or until one year after the decision is reversed or revised) and a copy of the decision must be provided to the system:

(*1*) Section 141.73(a)(1)—Any decision to allow a public water system using conventional filtration treatment or direct filtration to substitute a turbidity limit greater than 0.5 NTU;

(*2*) Section 141.73(b)(1)—Any decision to allow a public water system using slow sand filtration to substitute a turbidity limit greater than 1 NTU;

(*3*) Section 141.74(b)(2)—Any decision to allow an unfiltered public water system to use continuous turbidity monitoring;

(*4*) Section 141.74(b)(6)(i)—Any decision to allow an unfiltered public water system to sample residual disinfectant concentration at alternate locations if it also has ground water source(s);

(*5*) Section 141.74(c)(1)—Any decision to allow a public water system using filtration treatment to use continuous turbidity monitoring; or a public water system using slow sand filtration or filtration treatment other than conventional treatment, direct filtration or diatomaceous earth filtration to reduce turbidity sampling to once per day; or for systems serving 500 people or fewer to reduce turbidity sampling to once per day;

(*6*) Section 141.74(c)(3)(i)—Any decision to allow a filtered public water system to sample disinfectant residual concentration at alternate locations if it also has ground water source(s);

(*7*) Section 141.75(a)(2)(ix)—Any decision to allow reduced reporting by an unfiltered public water system;

(*8*) Section 141.75(b)(2)(iv)—Any decision to allow reduced reporting by a filtered public water system; and

(*9*) Section 141.76—Any decisions made to approve alternate recycle locations, require modifications to recycle return locations, or require modifications to recycle practices.

(B) Records of decisions made under the following provisions shall be kept for one year after the decision is made:

(*1*) Section 141.71(b)(1)(i)—Any decision that a violation of monthly CT compliance requirements was caused by circumstances that were unusual and unpredictable.

(*2*) Section 141.71(b)(1)(iv)—Any decision that a violation of the disinfection effectiveness criteria was not caused by a deficiency in treatment of the source water;

(*3*) Section 141.71(b)(5)—Any decision that a violation of the total coliform MCL was not caused by a deficiency in treatment of the source water;

(*4*) Section 141.74(b)(1)—Any decision that total coliform monitoring otherwise required because the turbidity of the source water exceeds 1 NTU is not feasible, except that if such decision allows a system to avoid monitoring without receiving State approval in each instance, records of the decision shall be kept until one year after the decision is rescinded or revised.

(C) Records of decisions made under the following provisions shall be kept for the specified period or 40 years, whichever is less.

(*1*) Section 141.71(a)(2)(i)—Any decision that an event in which the source water turbidity which exceeded 5 NTU for an unfiltered public water system was unusual and unpredictable shall be kept for 10 years.

(*2*) Section 141.71(b)(1)(iii)—Any decision by the State that failure to meet the disinfectant residual concentration requirements of §141.72(a)(3)(i) was caused by circumstances that were unusual and unpredictable, shall be kept unless filtration is installed. A copy of the decision must be provided to the system.

(*3*) Section 141.71(b)(2)—Any decision that a public water system's watershed control program meets the requirements of this section shall be kept until the next decision is available and filed.

(*4*) Section 141.70(c)—Any decision that an individual is a qualified operator for a public water system using a surface water source or a ground water

source under the direct influence of surface water shall be maintained until the qualification is withdrawn. The State may keep this information in the form of a list which is updated periodically. If such qualified operators are classified by category, the decision shall include that classification.

(*5*) Section 141.71(b)(3)—Any decision that a party other than the State is approved by the State to conduct on-site inspections shall be maintained until withdrawn. The State may keep this information in the form of a list which is updated periodically.

(*6*) Section 141.71(b)(4)—Any decision that an unfiltered public water system has been identified as the source of a waterborne disease outbreak, and, if applicable, that it has been modified sufficiently to prevent another such occurrence shall be kept until filtration treatment is installed. A copy of the decision must be provided to the system.

(*7*) Section 141.72—Any decision that certain interim disinfection requirements are necessary for an unfiltered public water system for which the State has determined that filtration is necessary, and a list of those requirements, shall be kept until filtration treatment is installed. A copy of the requirements must be provided to the system.

(*8*) Section 141.72(a)(2)(ii)—Any decision that automatic shut-off of delivery of water to the distribution system of an unfiltered public water system would cause an unreasonable risk to health or interfere with fire protection shall be kept until rescinded.

(*9*) Section 141.72(a)(4)(ii)—Any decision by the State, based on site-specific considerations, that an unfiltered system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, so that the disinfection requirements contained in §141.72(a)(4)(i) do not apply, and the basis for the decision, shall be kept until the decision is reversed or revised. A copy of the decision must be provided to the system.

(*10*) Section 141.72(b)(3)(ii)—Any decision by the State, based on site-specific conditions, that a filtered system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, so that the disinfection requirements contained in §141.72(b)(3)(i) do not apply, and the basis for the decision, shall be kept until the decision is reversed or revised. A copy of the decision must be provided to the system.

(*11*) Section 141.73(d)—Any decision that a public water system, having demonstrated to the State that an alternative filtration technology, in combination with disinfection treatment, consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, may use such alternative filtration technology, shall be kept until the decision is reversed or revised. A copy of the decision must be provided to the system.

(*12*) Section 141.74(b), table 3.1—Any decision that a system using either preformed chloramines or chloramines formed by the addition of ammonia prior to the addition of chlorine has demonstrated that 99.99 percent removal and/or inactivation of viruses has been achieved at particular CT values, and a list of those values, shall be kept until the decision is reversed or revised. A copy of the list of required values must be provided to the system.

(*13*) Section 141.74(b)(3)(v)—Any decision that a system using a disinfectant other than chlorine may use $CT_{99.9}$ values other than those in tables 2.1 or 3.1 and/or other operational parameters to determine if the minimum total inactivation rates required by §141.72(a)(1) are being met, and what those values or parameters are, shall be kept until the decision is reversed or revised. A copy of the list of required values or parameters must be provided to the system.

(*14*) Section 142.16(b)(2)(i)(B)—Any decision that a system using a ground water source is under the direct influence of surface water.

(iii) Records of any determination that a public water system supplied by a surface water source or a ground water source under the direct influence of surface water is not required to provide filtration treatment shall be kept for 40 years or until withdrawn, whichever is earlier. A copy of the determination must be provided to the system.

(5) Records of each of the following decisions made pursuant to the total coliform provisions of part 141 shall be made in writing and retained by the State.

(i) Records of the following decisions must be retained for 5 years.

(A) Section 141.21(b)(1)—Any decision to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample if the public water system has a logistical problem in collecting the repeat sample that is beyond the system's control, and what alternative time limit the system must meet.

(B) Section 141.21(b)(5)—Any decision to allow a system to waive the requirement for five routine samples the month following a total coliform-positive sample. If the waiver decision is made as provided in §141.21(b)(5), the record of the decision must contain all the items listed in that paragraph.

(C) Section 141.21(c)—Any decision to invalidate a total coliform-positive sample. If the decision to invalidate a total coliform-positive sample as provided in §141.21(c)(1)(iii) is made, the record of the decision must contain all the items listed in that paragraph.

(ii) Records of each of the following decisions must be retained in such a manner so that each system's current status may be determined.

(A) Section 141.21(a)(2)—Any decision to reduce the total coliform monitoring frequency for a community water system serving 1,000 persons or fewer, that has no history of total coliform contamination in its current configuration and had a sanitary survey conducted within the past five years showing that the system is supplied solely by a protected groundwater source and is free of sanitary defects, to less than once per month, as provided in §141.21(a)(2); and what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

(B) Section 141.21(a)(3)(i)—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving 1,000 persons or fewer to less than once per quarter, as provided in §141.21(a)(3)(i), and what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

(C) Section 141.21(a)(3)(ii)—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving more than 1,000 persons during any month the system serves 1,000 persons or fewer, as provided in §141.21(a)(3)(ii). A copy of the reduced monitoring frequency must be provided to the system.

(D) Section 141.21(a)(5)—Any decision to waive the 24-hour limit for taking a total coliform sample for a public water system which uses surface water, or ground water under the direct influence of surface water, and which does not practice filtration in accordance with part 141, subpart H, and which measures a source water turbidity level exceeding 1 NTU near the first service connection as provided in §141.21(a)(5).

(E) Section 141.21(d)(1)—Any decision that a non-community water system is using only protected and disinfected ground water and therefore may reduce the frequency of its sanitary survey to less than once every five years, as provided in §141.21(d), and what that frequency is. A copy of the reduced frequency must be provided to the system.

(F) Section 141.21(d)(2)—A list of agents other than the State, if any, approved by the State to conduct sanitary surveys.

(G) Section 141.21(e)(2)—Any decision to allow a public water system to forgo fecal coliform or *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is fecal coliform-positive or *E. coli*- positive, as provided in §141.21(e)(2).

(6) Records of analysis for other than microbiological contaminants (including total coliform, fecal coliform, and heterotrophic plate count), residual

disinfectant concentration, other parameters necessary to determine disinfection effectiveness (including temperature and pH measurements), and turbidity shall be retained for not less than 12 years and shall include at least the following information:

(i) Date and place of sampling.

(ii) Date and results of analyses.

(7) Any decisions made pursuant to the provisions of part 141, subpart P or subpart T of this chapter.

(i) Records of systems consulting with the State concerning a modification to disinfection practice under §§ 141.170(d), 141.172(c), and 141.542 of this chapter, including the status of the consultation.

(ii) Records of decisions that a system using alternative filtration technologies, as allowed under §§ 141.173(b) and § 141.552 of this chapter, can consistently achieve a 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts. The decisions must include State-set enforceable turbidity limits for each system. A copy of the decision must be kept until the decision is reversed or revised. The State must provide a copy of the decision to the system.

(iii) Records of systems required to do filter self-assessment, CPE, or CCP under the requirements of §§ 141.175 and 141.563 of this chapter.

(8) Any decisions made pursuant to the provisions of 40 CFR part 141, subparts U and V of this part.

(i) IDSE monitoring plans, plus any modifications required by the State, must be kept until replaced by approved IDSE reports.

(ii) IDSE reports and 40/30 certifications, plus any modifications required by the State, must be kept until replaced or revised in their entirety.

(iii) Operational evaluations submitted by a system must be kept for 10 years following submission.

(9) Any decisions made pursuant to the provisions of part 141, subpart W of this chapter.

(i) Results of source water *E. coli* and *Cryptosporidium* monitoring.

(ii) The bin classification after the initial and after the second round of source water monitoring for each filtered system, as described in § 141.710 of this chapter.

(iii) Any change in treatment requirements for filtered systems due to watershed assessment during sanitary surveys, as described in § 141.711(d) of this chapter.

(iv) The determination of whether the mean *Cryptosporidium* level is greater than 0.01 oocysts/L after the initial and after the second round of source water monitoring for each unfiltered system, as described in § 141.712(a) of this chapter.

(v) The treatment processes or control measures that systems use to meet their *Cryptosporidium* treatment requirements under § 141.711 or § 141.712 of this chapter.

(vi) A list of systems required to cover or treat the effluent of an uncovered finished water storage facility, as specified in § 141.714 of this chapter.

(10) Records of each of the following decisions made pursuant to the provisions of subpart Y of part 141 must be made in writing and retained by the State.

(i) Records of the following decisions or activities must be retained for five years.

(A) Sections 141.858(a), 141.853(c)(2), 141.856(c), and 141.857(c) of this chapter—Any case-by-case decision to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample, or to extend the 24-hour limit for collection of samples following invalidation, or for an unfiltered subpart H system of this part to collect a total coliform sample following a turbidity measurement exceeding 1 NTU.

(B) Sections 141.854(j) and 141.855(f) of this chapter—Any decision to allow a system to waive the requirement for three routine samples the month following a total coliform-positive sample. The record of the waiver decision must contain all the items listed in those sections.

(C) Section 141.853(c) of this chapter—Any decision to invalidate a total coliform-positive sample. If the decision to invalidate a total coliform-positive sample as provided in § 141.853(c)(1) of this chapter is made, the record of the

decision must contain all the items listed in that section.

(D) Section 141.859 of this chapter—Completed and approved subpart Y assessments, including reports from the system that corrective action has been completed as required by §141.861(a)(2) of this chapter.

(ii) Records of each of the following decisions must be retained in such a manner so that each system's current status may be determined:

(A) Section 141.854(e) of this chapter—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving 1,000 or fewer people to less than once per quarter, as provided in §141.854(e) of this chapter, including what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

(B) Section 141.855(d) of this chapter—Any decision to reduce the total coliform monitoring frequency for a community water system serving 1,000 or fewer people to less than once per month, as provided in §141.855(d) of this chapter, including what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

(C) Section 141.857(d) of this chapter—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving more than 1,000 persons during any month the system serves 1,000 or fewer people, as provided in §141.857(d) of this chapter. A copy of the reduced monitoring frequency must be provided to the system.

(D) Section 141.858(b)(2) of this chapter—Any decision to allow a system to forgo *E. coli* testing of a total coliform-positive sample if that system assumes that the total coliform-positive sample is *E. coli*-positive.

(b) Records required to be kept pursuant to paragraph (a) of this section must be in a form admissible as evidence in State enforcement proceedings.

(c) Each State which has primary enforcement responsibility shall maintain current inventory information for every public water system in the State and shall retain inventory records of public water systems for not less than 12 years.

(d) Each State which has primary enforcement responsibility shall retain, for not less than 12 years, files which shall include for each such public water system in the State:

(1) Reports of sanitary surveys;

(2) Records of any State approvals;

(3) Records of any enforcement actions.

(4) A record of the most recent vulnerability determination, including the monitoring results and other data supporting the determination, the State's findings based on the supporting data and any additional bases for such determination; except that it shall be kept in perpetuity or until a more current vulnerability determination has been issued.

(5) A record of all current monitoring requirements and the most recent monitoring frequency decision pertaining to each contaminant, including the monitoring results and other data supporting the decision, the State's findings based on the supporting data and any additional bases for such decision; except that the record shall be kept in perpetuity or until a more recent monitoring frequency decision has been issued.

(6) A record of the most recent asbestos repeat monitoring determination, including the monitoring results and other data supporting the determination, the State's findings based on the supporting data and any additional bases for the determination and the repeat monitoring frequency; except that these records shall be maintained in perpetuity or until a more current repeat monitoring determination has been issued.

(7) Records of annual certifications received from systems pursuant to part 141, subpart K demonstrating the system's compliance with the treatment techniques for acrylamide and/or epichlorohydrin in §14.111.

(8) Records of the currently applicable or most recent State determinations, including all supporting information and an explanation of the technical basis for each decision, made under the following provisions of 40

CFR, part 141, subpart I for the control of lead and copper:

(i) Section 141.81(b)—for any water system deemed to be optimized under §141.81(b)(1) or (b)(3) of this chapter, any conditions imposed by the State on specific water systems to ensure the continued operation and maintenance of corrosion control treatment in place;

(ii) Section 141.82(b)—decisions to require a water system to conduct corrosion control treatment studies;

(iii) Section 141.82(d)—designations of optimal corrosion control treatment;

(iv) Section 141.82(f)—designations of optimal water quality parameters;

(v) Section 141.82(h)—decisions to modify a public water system's optimal corrosion control treatment or water quality parameters;

(vi) Section 141.83(b)(2)—determinations of source water treatment;

(vii) Section 141.83(b)(4)—designations of maximum permissible concentrations of lead and copper in source water;

(viii) Section 141.84(e)—determinations establishing shorter lead service line service line replacement schedules under §141.84;

(ix) Sections 141.81(b)(3)(iii), 141.86(d)(4)(vii), and 141.86(g)(4)(iii)—determinations of additional monitoring requirements and/or other actions required to maintain optimal corrosion control by systems monitoring for lead and copper at the tap less frequently than once every six months that change treatment or add a new source of water;

(x) Section 141.85—system-specific decisions regarding the content of written public education materials and/or the distribution of these materials;

(xi) Section 141.86(b)(5)—system-specific determinations regarding use of non-first-draw samples at non-transient non-community water systems, and community water systems meeting the criteria of §141.85(b)(7)(i) and (ii) of this chapter, that operate 24 hours a day;

(xii) Section 141.86(c)—system-specific designations of sampling locations for systems subject to reduced monitoring;

(xiii) Section 141.86(d)(iv)(A)—system-specific determinations pertaining to alternative sample collection periods for systems subject to reduced monitoring;

(xiv) Section 141.86(g)—determinations of small system monitoring waivers, waiver recertifications, and waiver revocations;

(xv) Section 141.87(c)(3)—determinations regarding representative entry point locations at ground water systems;

(xvi) Section 141.90(e)(4)—system-specific determinations regarding the submission of information to demonstrate compliance with partial lead service line replacement requirements; and

(xvii) Section 141.90(f)—system-specific decisions regarding the resubmission of detailed documentation demonstrating completion of public education requirements.

(9) Records of reports and any other information submitted by PWSs under §141.90 of this chapter, including records of any 90th percentile values calculated by the State under §141.90(h) of this chapter.

(10) Records of State activities, and the results thereof, to:

(i) Verify compliance with State determinations issued under §§141.82(f) of this chapter, 141.82(h) of this chapter, 141.83(b)(2) of this chapter, and 141.83(b)(4) of this chapter;

(ii) Verify compliance with the requirements related to partial lead service line replacement under §141.84(d) of this chapter and compliance with lead service line replacement schedules under §141.84(e) of this chapter; and

(iii) Invalidate tap water lead and copper samples under §141.86(f) of this chapter.

(11) Records of each system's currently applicable or most recently designated monitoring requirements. If, for the records identified in paragraphs (d)(8)(i) through (d)(8)(xvii) of this section, no change is made to State determinations during a 12-year retention period, the State shall retain the record until a new decision, determination, or designation has been issued.

(12) Records of the currently applicable or most recent State determinations, including all supporting information and an explanation of the technical basis for each decision, made under the following provisions of 40

CFR part 141, subpart L for the control of disinfectants and disinfection byproducts. These records must also include interim measures toward installation.

(i) States must keep records of systems that are installing GAC or membrane technology in accordance with §141.64(b)(2) of this chapter. These records must include the date by which the system is required to have completed installation.

(ii) States must keep records of systems that are required, by the State, to meet alternative minimum TOC removal requirements or for whom the State has determined that the source water is not amenable to enhanced coagulation in accordance with §141.135(b)(3) and (4) of this chapter, respectively. These records must include the alternative limits and rationale for establishing the alternative limits.

(iii) States must keep records of subpart H systems using conventional treatment meeting any of the alternative compliance criteria in §141.135(a)(2) or (3) of this chapter.

(iv) States must keep a register of qualified operators that have met the State requirements developed under §142.16(h)(2).

(13) Records of systems with multiple wells considered to be one treatment plant in accordance with §141.132(a)(2) of this chapter and §142.16(h)(5).

(14) Monitoring plans for subpart H systems serving more than 3,300 persons in accordance with §141.132(f) of this chapter.

(15) List of laboratories approved for analyses in accordance with §141.131(b) of this chapter.

(16) List of systems required to monitor for disinfectants and disinfection byproducts in accordance with part 141, subpart L of this chapter. The list must indicate what disinfectants and DBPs, other than chlorine, TTHM, and HAA5, if any, are measured.

(17) Records of the currently applicable or most recent State determination, including all supporting information and an explanation of the technical basis of each decision, made under the following provisions of 40 CFR part 141, subpart S and 40 CFR part 142.

(i) Section 142.16(o)(2)(v). Records of written notices of significant deficiencies.

(ii) Section 141.403(a)(5)(ii) of this chapter. Records of corrective action plans, schedule approvals, and State-specified interim measures.

(iii) Section 142.16(o)(4). Records of confirmations under §141.403(a) of this chapter that a significant deficiency has been corrected or the fecal contamination in the ground water source has been addressed.

(iv) Section 141.402(a)(5) of this chapter. Records of State determinations and records of ground water system's documentation for not conducting triggered source water monitoring.

(v) Section 141.402(d) of this chapter. Records of invalidations of fecal indicator-positive ground water source samples.

(vi) Section 141.402(a)(2)(ii) of this chapter. Records of State approvals of source water monitoring plans.

(vii) Section 142.16(o)(4)(ii). Records of notices of the minimum residual disinfection concentration (when using chemical disinfection) needed to achieve at least 4-log virus inactivation before or at the first customer.

(viii) Sections 142.16(o)(4)(iv) and 142.16(o)(4)(v) Records of notices of the State-specified monitoring and compliance requirements (when using membrane filtration or alternative treatment) needed to achieve at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer.

(ix) Sections 141.403(b)(1) and 141.403(b)(2) of this chapter. Records of written notices from the ground water system that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source.

(x) Section 142.16(o)(4)(vi). Records of written determinations that the ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal).

(e) Each State which has primary enforcement responsibility shall retain records pertaining to each variance and exemption granted by it for a period of not less than 5 years following the expiration of such variance or exemption.

(f) Public notification records under subpart Q of part 141 of this chapter received from public water systems (including certifications of compliance and copies of public notices) and any state determinations establishing alternative public notification requirements for the water systems must be retained for three years.

(g) Records required to be kept under this section shall be available to the Regional Administrator upon request. The records required to be kept under this section shall be maintained and made available for public inspection by the State, or, the State at its option may require suppliers of water to make available for public inspection those records maintained in accordance with §141.33.

[41 FR 2918, Jan. 20, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §142.14, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§142.15 Reports by States.

Each State which has primary enforcement responsibility shall submit to the Administrator the following information:

(a) Each State which has primary enforcement responsibility shall submit quarterly reports to the Administrator on a schedule and in a format prescribed by the Administrator, consisting of the following information:

(1) New violations by public water systems in the State during the previous quarter of State regulations adopted to incorporate the requirements of national primary drinking water regulations, including violations of the public notification requirements under subpart Q of part 141 of this chapter;

(2) New enforcement actions taken by the State during the previous quarter against public water systems with respect to State regulations adopted to incorporate the requirements of national primary drinking water regulations;

(3) Notification of any new variance or exemption granted during the previous quarter. The notice shall include a statement of reasons for the granting of the variance or exemption, including documentation of the need for the variance or exemption and the finding that the granting of the variance or exemption will not result in an unreasonable risk to health. The State may use a single notification statement to report two or more similar variances or exemptions.

(b) Each State which has primary enforcement responsibility shall submit annual reports to the Administrator on a schedule and in a format prescribed by the Administrator, consisting of the following information:

(1) All additions or corrections to the State's inventory of public water systems;

(2) A summary of the status of each variance and exemption currently in effect.

(c) *Special reports*—(1) *Surface Water Treatment Rule.* (i)(A) A list identifying the name, PWS identification number and date of the determination for each public water system supplied by a surface water source or a ground water source under the direct influence of surface water, which the State has determined is not required to provide filtration treatment.

(B) A list identifying the name and PWS identification number of each public water system supplied by a surface water source or ground water source under the direct influence of surface water, which the State has determined, based on an evaluation of site-specific considerations, has no means of having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified in §141.74(a)(3) and is providing adequate disinfection in the distribution system, regardless of whether the system is in compliance with the criteria of §141.72 (a)(4)(i) or (b)(3)(i) of this chapter, as allowed by §141.72 (a)(4)(ii) and (b)(3)(ii). The list must include the effective date of each determination.

(ii) Notification within 60 days of the end of the calendar quarter of any determination that a public water system using a surface water source or a ground water source under the direct influence of surface water is not required to provide filtration treatment. The notification must include a statement describing the system's compliance with each requirement of the State's regulations that implement §141.71 and a summary of comments, if any, received from the public on the determination. A single notification may be used to report two or more such determinations.

(2) *Total coliforms.* A list of public water systems which the State is allowing to monitor less frequently than once per month for community water systems or less frequently than once per quarter for non-community water systems as provided in §141.21(a), including the effective date of the reduced monitoring requirement for each system.

(3) *Total coliforms under subpart Y.* A list of systems that the State is allowing to monitor less frequently than once per month for community water systems or less frequently than once per quarter for non-community water systems as provided in §§141.855 and 141.854 of this chapter, including the applicable date of the reduced monitoring requirement for each system.

(4) States shall report quarterly, in a format and on a schedule prescribed by the Administrator, the following information related to each system's compliance with the treatment techniques for lead and copper under 40 CFR part 141, subpart I during the preceding calendar quarter. Specifically, States shall report as follows:

(i) For any reports provided prior to May 15, 2000, States shall report the name and PWS identification number:

(A) Each public water system which exceeded the lead and copper action levels and the date upon which the exceedance occurred;

(B) Each public water system required to complete the corrosion control evaluation specified in §141.82(c) and the date the State received the results of the evaluations from each system;

(C) Each public water system for which the State has designated optimal corrosion control treatment under §141.82(d), the date of the determination, and each system that completed installation of treatment as certified under §141.90(c)(3);

(D) Each public water system for which the State has designated optimal water quality parameters under §141.82(f) and the date of the determination;

(E) Each public water system which the State has required to install source water treatment under §141.83(b)(2), the date of the determination, and each system that completed installation of treatment as certified under §141.90(d)(2);

(F) Each public water system for which the State has specified maximum permissible source water levels under §141.83(b)(4); and

(G) Each public water system required to begin replacing lead service lines as specified in §141.84, each public water system for which the State has established a replacement schedule under §141.84(f), and each system reporting compliance with its replacement schedule under §141.90(e)(2).

(ii) For any reports provided after May 14, 2000 and before January 14, 2002, States may report in accordance with either paragraph (c)(4)(i) or (c)(4)(iii) of this section.

(iii) For all reports submitted on or after January 14, 2002, States shall report the PWS identification number of each public water system identified in paragraphs (c)(4)(iii)(A) through (F) of this section.

(A) For each large and medium-size public water system, all 90th percentile lead levels calculated during each monitoring period specified in §141.86 of this chapter, and the first and last day of the monitoring period for which the 90th percentile lead level was calculated;

(B) For each small public water system, the 90th percentile lead level calculated during each monitoring period in which the system exceeds the lead action level, and the first and last day of each monitoring period in which an exceedance occurred;

(C) For each public water system (regardless of size), the 90th percentile

copper level calculated during each monitoring period in which the system exceeds the copper action level, and the first and last day of each monitoring period in which an exceedance occurred;

(D) For each public water system for which the State has designated optimal water quality parameters under §141.82(f) of this chapter, or which the State has deemed to have optimized corrosion control under §141.81(b)(1) or (b)(3) of this chapter, the date of the determination and the paragraph(s) under which the State made its determination;

(E) For each public water system required to begin replacing lead service lines as specified in §141.84 of this chapter and the date each system must begin replacement; and

(F) For each public water system that has implemented optimal corrosion control, completed applicable source water treatment requirements pursuant to §141.83 of this chapter and/or completed lead service line replacement requirements pursuant to §141.84 of this chapter, and the date of the State's determination that these requirements have been met. The date reported shall be the latest of the following events:

(*1*) The date the State designates optimal water quality parameters under §141.82(f) of this chapter or deems the system to have optimized corrosion control pursuant to §141.81(b)(1) or (b)(3) of this chapter;

(*2*) For systems triggered into source water treatment, the date the State designates maximum permissible source water levels under §141.83(b)(4) of this chapter or determines pursuant to §141.83(b)(2) of this chapter that source water treatment is not required; or

(*3*) For systems triggered into lead service line replacement, the date the system completes lead service line replacement or becomes eligible to cease lead service line replacement pursuant to §141.84(f) of this chapter.

(5) *Sanitary surveys.* A list of subpart H systems that have had a sanitary survey completed during the previous year and an annual evaluation of the State's program for conducting sanitary surveys under §142.16(b)(3) of this chapter.

(6) *Subpart W.* (i) The bin classification after the initial and after the second round of source water monitoring for each filtered system, as described in §141.710 of this chapter.

(ii) Any change in treatment requirements for these systems due to watershed assessment during sanitary surveys, as described in §141.711(d) of this chapter.

(iii) The determination of whether the mean *Cryptosporidium* level is greater than 0.01 oocysts/L both after the initial and after the second round of source water monitoring for each unfiltered system, as described in §141.712(a) of this chapter.

(7) *Ground water rule*—(i) *Sanitary surveys.* The month and year in which the most recent sanitary survey was completed or, for a State that uses a phased review process, the date the last element of the applicable eight elements was evaluated under §142.16(o)(2) for each ground water system.

(ii) *Corrective action requirements.* For any corrective action under §141.403(a) of this chapter, the date the ground water system completed corrective action.

(iii) *Compliance monitoring.* All ground water systems providing at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source(s).

(d) The reports submitted pursuant to this section shall be made available by the State to the public for inspection at one or more locations within the State.

[41 FR 2918, Jan. 20, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §142.15, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 142.16 Special primacy requirements.

(a) *State public notification requirements.* (1) Each State that has primary enforcement authority under this part must submit complete and final requests for approval of program revisions to adopt the requirements of subpart Q of part 141 of this chapter, using

the procedures in § 142.12(b) through (d). At its option, a State may, by rule, and after notice and comment, establish alternative public notification requirements with respect to the form and content of the public notice required under subpart Q of part 141 of this chapter. The alternative requirements must provide the same type and amount of information required under subpart Q and must meet the primacy requirements under § 142.10.

(2) As part of the revised primacy program, a State must also establish enforceable requirements and procedures when the State adds to or changes the requirements under:

(i) *Table 1 to 40 CFR 141.201(a)(Item (3)(v))*—To require public water systems to give a public notice for violations or situations other than those listed in appendix A of subpart Q of part 141 of this chapter;

(ii) *40 CFR 141.201(c)(2)*—To allow public water systems, under the specific circumstances listed in § 141.201(c)(2), to limit the distribution of the public notice to persons served by the portion of the distribution system that is out of compliance;

(iii) *Table 1 of 40 CFR 141.202(a) (Items (5), (6), and (9))*—To require public water systems to give a Tier 1 public notice (rather than a Tier 2 or Tier 3 notice) for violations or situations listed in appendix A of subpart Q of part 141 of this chapter;

(iv) *40 CFR 141.202(b)(3)*—To require public water systems to comply with additional Tier 1 public notification requirements set by the State subsequent to the initial 24-hour Tier 1 notice, as a result of their consultation with the State required under §§ 141.202(b)(2);

(v) *40 CFR 141.202(c), 141.203(c) and 141.204(c)*—To require a different form and manner of delivery for Tier 1, 2 and 3 public notices.

(vi) *Table 1 to 40 CFR 141.203(a) (Item (2))*—To require the public water systems to provide a Tier 2 public notice (rather than Tier (3)) for monitoring or testing procedure violations specified by the State;

(vii) *40 CFR 141.203(b)(1)*—To grant public water systems an extension up to three months for distributing the Tier 2 public notice in appropriate circumstances (other than those specifically excluded in the rule);

(viii) *40 CFR 141.203(b)(2)*—To grant a different repeat notice frequency for the Tier 2 public notice in appropriate circumstances (other than those specifically excluded in the rule), but no less frequently than once per year;

(ix) *40 CFR 141.203(b)(3)*—To respond within 24 hours to a request for consultation by the public water system to determine whether a Tier 1 (rather than a Tier 2) notice is required for a turbidity MCL violation under § 141.13(b) or a SWTR/IESWTR TT violation due to a single exceedance of the maximum allowable turbidity limit;

(x) *40 CFR 141.205(c)*—To determine the specific multilingual requirement for a public water system, including defining "large proportion of non-English-speaking consumers."

(b) *Requirements for States to adopt 40 CFR part 141, subpart H Filtration and Disinfection.* In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State provisions are no less stringent than the federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart H Filtration and Disinfection, must contain the information specified in this paragraph (b), except that States which require without exception all public water systems using a surface water source or a ground water source under the direct influence of surface water to provide filtration need not demonstrate that the State program has provisions that apply to systems which do not provide filtration treatment. However, such States must provide the text of the State statutes or regulations which specifies that all public water systems using a surface water source or a ground water source under the direct influence of surface water must provide filtration.

(1) *Enforceable requirements.* (i) In addition to adopting criteria no less stringent than those specified in part 141, subpart H of this chapter, the State's application must include enforceable design and operating criteria

for each filtration treatment technology allowed or a procedure for establishing design and operating conditions on a system-by-system basis (e.g., a permit system).

(ii) States must have the appropriate rules or other authority to assure that PWSs respond in writing to significant deficiencies outlined in sanitary survey reports required under paragraph (b)(3) of this section no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.

(iii) States must have the appropriate rules or other authority to assure that PWSs take necessary steps to address significant deficiencies identified in sanitary survey reports required under paragraph (b)(3) of this section, if such deficiencies are within the control of the PWS and its governing body.

(2) *State practices or procedures.* (i) A State application for program revision approval must include a description of how the State will accomplish the following:

(A) Section 141.70(c) (qualification of operators)—Qualify operators of systems using a surface water source or a ground water source under the direct influence of surface water.

(B) Determine which systems using a ground water source are under the direct influence of surface water by June 29, 1994 for community water systems and by June 29, 1999 for non-community water systems.

(C) Section 141.72(b)(1) (achieving required *Giardia lamblia* and virus removal in filtered systems)—Determine that the combined treatment process incorporating disinfection treatment and filtration treatment will achieve the required removal and/or inactivation of *Giardia lamblia* and viruses.

(D) Section 141.74(a) (State approval of parties to conduct analyses)—approve parties to conduct pH, temperature, turbidity, and residual disinfectant concentration measurements.

(E) Determine appropriate filtration treatment technology for source waters of various qualities.

(ii) For a State which does not require all public water systems using a surface water source or ground water source under the direct influence of surface water to provide filtration treatment, a State application for program revision approval must include a description of how the State will accomplish the following:

(A) Section 141.71(b)(2) (watershed control program)—Judge the adequacy of watershed control programs.

(B) Section 141.71(b)(3) (approval of on-site inspectors)—Approve on-site inspectors other than State personnel and evaluate the results of on-site inspections.

(iii) For a State which adopts any of the following discretionary elements of part 141 of this chapter, the application must describe how the State will:

(A) Section 141.72 (interim disinfection requirements)—Determine interim disinfection requirements for unfiltered systems which the State has determined must filter which will be in effect until filtration is installed.

(B) Section 141.72 (a)(4)(ii) and (b)(3)(ii) (determination of adequate disinfection in system without disinfectant residual)—Determine that a system is unable to measure HPC but is still providing adequate disinfection in the distribution system, as allowed by §141.72(a)(4)(ii) for systems which do not provide filtration treatment and §141.72(b)(3)(ii) for systems which do provide filtration treatment.

(C) Section 141.73 (a)(1) and (b)(1) (alternative turbidity limit)—Determine whether an alternative turbidity limit is appropriate and what the level should be as allowed by §141.73(a)(1) for a system using conventional filtration treatment or direct filtration and by §141.73(b)(1) for a system using slow sand filtration.

(D) Section 141.73(d) (alternative filtration technologies)—Determine that a public water system has demonstrated that an alternate filtration technology, in combination with disinfection treatment, achieves adequate removal and/or disinfection of *Giardia lamblia* and viruses.

(E) Section 141.74(a)(5) (alternate analytical method for chlorine)—Approve DPD colorimetric test kits for free and combined chlorine measurement or approve calibration of automated methods by the Indigo Method for ozone determination.

(F) Section 141.74 (b)(2) and (c)(1) (approval of continuous turbidity monitoring)—Approve continuous turbidity monitoring, as allowed by §141.74(b)(2) for a public water system which does not provide filtration treatment and §141.74(c)(1) for a system which does provide filtration treatment.

(G) Section 141.74 (b)(6)(i) and (c)(3)(i) (approval of alternate disinfectant residual concentration sampling plans)—Approve alternate disinfectant residual concentration sampling plans for systems which have a combined ground water and surface water or ground water and ground water under the direct influence of a surface water distribution system, as allowed by §141.74(b)(6)(i) for a public water system which does not provide filtration treatment and §141.74(c)(3)(i) for a public water system which does provide filtration treatment.

(H) Section 141.74(c)(1) (reduction of turbidity monitoring)—Decide whether to allow reduction of turbidity monitoring for systems using slow sand filtration, an approved alternate filtration technology or serving 500 people or fewer.

(I) Section 141.75 (a)(2)(ix) and (b)(2)(iv) (reduced reporting)—Determine whether reduced reporting is appropriate, as allowed by §141.75(a)(2)(ix) for a public water system which does not provide filtration treatment and §141.75(b)(2)(iv) for a public water system which does provide filtration treatment.

(iv) For a State which does not require all public water systems using a surface water source or ground water source under the direct influence of surface water to provide filtration treatment and which uses any of the following discretionary provisions, the application must describe how the State will:

(A) Section 141.71(a)(2)(i) (source water turbidity requirements)—Determine that an exceedance of turbidity limits in source water was caused by circumstances that were unusual and unpredictable.

(B) Section 141.71(b)(1)(i) (monthly CT compliance requirements)—Determine whether failure to meet the requirements for monthly CT compliance in §141.72(a)(1) was caused by circumstances that were unusual and unpredictable.

(C) Section 141.71(b)(1)(iii) (residual disinfectant concentration requirements)—Determine whether failure to meet the requirements for residual disinfectant concentration entering the distribution system in §141.72(a)(3)(i) was caused by circumstances that were unusual and unpredictable.

(D) Section 141.71(b)(1)(iv) (distribution system disinfectant residual concentration requirements)—Determine whether failure to meet the requirements for distribution system residual disinfectant concentration in §141.72(a)(4) was related to a deficiency in treatment.

(E) Section 141.71(b)(4) (system modification to prevent waterborne disease outbreak)—Determine that a system, after having been identified as the source of a waterborne disease outbreak, has been modified sufficiently to prevent another such occurrence.

(F) Section 141.71(b)(5) (total coliform MCL)—Determine whether a total coliform MCL violation was caused by a deficiency in treatment.

(G) Section 141.72(a)(1) (disinfection requirements)—Determine that different ozone, chloramine, or chlorine dioxide $CT_{99.9}$ values or conditions are adequate to achieve required disinfection.

(H) Section 141.72(a)(2)(ii) (shut-off of water to distribution system)—Determine whether a shut-off of water to the distribution system when the disinfectant residual concentration entering the distribution system is less than 0.2 mg/1 will cause an unreasonable risk to health or interfere with fire protection.

(I) Section 141.74(b)(1) (coliform monitoring)—Determine that coliform monitoring which otherwise might be required is not feasible for a system.

(J) Section 141.74(b), table 3.1 (disinfection with chloramines)—Determine the conditions to be met to insure 99.99 percent removal and/or inactivation of viruses in systems which use either preformed chloramines or chloramines for which ammonia is added to the water before chlorine, as allowed by table 3.1.

(3) *Sanitary survey.* In addition to the general requirements for sanitary surveys contained in §142.10(b)(2), an application must describe how the State will implement a sanitary survey program that meets the requirements in paragraphs (b)(3)(i) through (v) of this section. For the purposes of this paragraph, "sanitary survey" means an on-site review of the water source (identifying sources of contamination using results of source water assessments where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

(i) The State must conduct sanitary surveys for all surface water systems (including groundwater under the influence) that address the eight sanitary survey components listed in paragraphs (b)(3)(i)(A) through (H) of this section no less frequently than every three years for community systems and no less frequently than every five years for noncommunity systems. The State may allow sanitary surveys conducted after December 1995 to serve as the first set of required sanitary surveys if the surveys address the eight sanitary survey components listed in paragraphs (b)(3)(i)(A) through (H) of this section.

(A) Source.

(B) Treatment.

(C) Distribution system.

(D) Finished water storage.

(E) Pumps, pump facilities, and controls.

(F) Monitoring and reporting and data verification.

(G) System management and operation.

(H) Operator compliance with State requirements.

(ii) For community systems determined by the State to have outstanding performance based on prior sanitary surveys, subsequent sanitary surveys may be conducted no less than every five years. In its primacy application, the State must describe how it will decide whether a system has outstanding performance and is thus eligible for sanitary surveys at a reduced frequency.

(iii) Components of a sanitary survey may be completed as part of a staged or phased state review process within the established frequency.

(iv) When conducting sanitary surveys for systems required to comply with the disinfection profiling requirements in §141.172 of this chapter, the State must also review the disinfection profile as part of the sanitary survey.

(v) In its primacy application, the State must describe how it will decide whether a deficiency identified during a sanitary survey is significant for the purposes of paragraph (b)(1)(ii) of this section.

(c) *Total coliform requirements.* In addition to meeting the general primacy requirements of this part, an application for approval of a State program revision that adopts the requirements of the national primary drinking water regulation for total coliforms must contain the following information:

(1) The application must describe the State's plan for determining whether sample siting plans are acceptable (including periodic reviews), as required by §141.21(a)(1).

(2) The national primary drinking water regulation for total coliforms in part 141 gives States the option to impose lesser requirements in certain circumstances, which are listed below. If a State chooses to exercise any of these options, its application for approval of a program revision must include the information listed below (the State need only provide the information listed for those options it has chosen to use).

(i) Section 141.21(a)(2) (Reduced monitoring requirements for community water systems serving 1,000 or fewer persons)—A description of how the State will determine whether it is appropriate to reduce the total coliform monitoring frequency for such systems using the criteria in §141.21(a)(2) and how it will determine the revised frequency.

(ii) Section 141.21(a)(3)(i) (Reduced monitoring requirements for non-community water systems using ground water and serving 1,000 persons or fewer)—A description of how the State will determine whether it is appropriate to reduce the total coliform monitoring frequency for such systems

using the criteria in §141.21(a)(3)(i) and how it will determine the revised frequency.

(iii) Section 141.21(a)(3)(ii) (Reduced monitoring for non-community water systems using ground water and serving more than 1,000 persons)—A description of how the State will determine whether it is appropriate to reduce the total coliform monitoring frequency for non-community water systems using only ground water and serving more than 1,000 persons during any month the system serves 1,000 persons or fewer and how it will determine the revised frequency.

(iv) Section 141.21(a)(5) (Waiver of time limit for sampling after a turbidity sampling result exceeds 1 NTU)—A description of how the State will determine whether it is appropriate to waive the 24-hour time limit.

(v) Section 141.21(b)(1) (Waiver of time limit for repeat samples)—A description of how the State will determine whether it is appropriate to waive the 24-hour time limit and how it will determine what the revised time limit will be.

(vi) Section 141.21(b)(3) (Alternative repeat monitoring requirements for systems with a single service connection)—A description of how the State will determine whether it is appropriate to allow a system with a single service connection to use an alternative repeat monitoring scheme, as provided in §141.21(b)(3), and what the alternative requirements will be.

(vii) Section 141.21(b)(5) (Waiver of requirement to take five routine samples the month after a system has a total coliform-positive sample)—A description of how the State will determine whether it is appropriate to waive the requirement for certain systems to collect five routine samples during the next month it serves water to the public, using the criteria in §141.21(b)(5).

(viii) Section 141.21(c) (Invalidation of total coliform-positive samples)—A description of how the State will determine whether it is appropriate to invalidate a total coliform-positive sample, using the criteria in §141.21(c).

(ix) Section 141.21(d) (Sanitary surveys)—A description of the State's criteria and procedures for approving agents other than State personnel to conduct sanitary surveys.

(x) Section 141.21(e)(2) (Waiver of fecal coliform or *E. coli* testing on a total coliform-positive sample)—A description of how the State will determine whether it is appropriate to waive fecal coliform or *E. coli* testing on a total coliform-positive sample.

(d) *Requirements for States to adopt 40 CFR part 141, subpart I—Control of Lead and Copper.* An application for approval of a State program revision which adopts the requirements specified in 40 CFR part 141, subpart I, must contain (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the federal requirements) a description of how the State will accomplish the following program requirements:

(1) Section 141.82—State designation of optimal corrosion control.

(i) Sections 141.82(d), 141.82(f), and 141.82(h)—Designating optimal corrosion control treatment methods, optimal water quality parameters, and modifications thereto.

(ii) Section 141.82(g)—Designating an alternative approach for aggregating multiple measurements collected during the same day for a water quality parameter at a sampling location, if the State elects to adopt a formula other than the one specified in §141.82(g)(1) of this chapter.

(2) Sections 141.83(b)(2) and 141.83(b)(4)—Designating source water treatment methods, maximum permissible source water levels for lead and copper and modifications thereto.

(3) Section 141.90(e)—Verifying compliance with lead service line replacement schedules and completion of all partial lead service line replacement activities.

(4) Section 141.86(d)(4)(iv)(A)—Designating an alternative period for sample collection for community water systems subject to reduced monitoring.

(e) An application for approval of a State program revision which adopts the requirements specified in §§141.11, 141.23, 141.24, 141.32, 141.61, and 141.62 for a newly regulated contaminant must contain the following (in addition to

the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the Federal requirements):

(1) If a State chooses to issue waivers from the monitoring requirements in §§ 141.23 and 141.24, the State shall describe the procedures and criteria which it will use to review waiver applications and issue waiver determinations.

(i) The procedures for each contaminant or class of contaminants shall include a description of:

(A) The waiver application requirements;

(B) The State review process for "use" waivers and for "susceptibility" waivers; and

(C) The State decision criteria, including the factors that will be considered in deciding to grant or deny waivers. The decision criteria must include the factors specified in §§ 141.24(f)(8) and 141.24(h)(6).

(ii) The State must specify the monitoring data and other documentation required to demonstrate that the contaminant is eligible for a "use" and/or "susceptibility" waiver.

(2) A monitoring plan for the initial monitoring period by which the State will assure all systems complete the required initial monitoring within the regulatory deadlines.

NOTE: States may update their monitoring plan submitted under the Phase II Rule or simply note in their application that they will use the same monitoring plan for the Phase V Rule.

(i) The initial monitoring plan must describe how systems will be scheduled during the initial monitoring period and demonstrate that the analytical workload on certified laboratories for each of the three years has been taken into account, to assure that the State's plan will result in a high degree of monitoring compliance and that as a result there is a high probability of compliance and will be updated as necessary.

(ii) The State must demonstrate that the initial monitoring plan is enforceable under State law.

(f) *Consumer Confidence Report requirements.* (1) Each State that has primary enforcement responsibility must adopt the requirements of 40 CFR part 141, subpart O no later than August 21, 2000. States must submit revised programs to EPA for approval using the procedures in § 142.12(b) through (d).

(2) Each State that has primary enforcement responsibility must make reports submitted to the States in compliance with 40 CFR 141.155(c) available to the public upon request.

(3) Each State that has primary enforcement responsibility must maintain a copy of the reports for a period of one year and the certifications obtained pursuant to 40 CFR 141.155(c) for a period of 5 years.

(4) Each State that has primary enforcement responsibility must report violations of this subpart in accordance with the requirements of § 142.15(a)(1).

(g) *Requirements for States to adopt 40 CFR part 141, Subpart P—Enhanced Filtration and Disinfection—Systems Serving 10,000 or More People.* In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State provisions are no less stringent than the Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, Subpart P Enhanced Filtration and Disinfection—Systems Serving 10,000 or More People, must contain the information specified in this paragraph:

(1) *Enforceable requirements.* States must have the appropriate rules or other authority to require PWSs to conduct a Composite Correction Program (CCP) and to assure that PWSs implement any followup recommendations that result as part of the CCP. The CCP consists of two elements—a Comprehensive Performance Evaluation (CPE) and Comprehensive Technical Assistance (CTA). A CPE is a thorough review and analysis of a plant's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. A CTA is the performance improvement phase that is implemented if the CPE results indicate improved performance potential. During

the CTA phase, the system must identify and systematically address plant-specific factors. The CTA is a combination of utilizing CPE results as a basis for followup, implementing process control priority-setting techniques and maintaining long-term involvement to systematically train staff and administrators.

(2) *State practices or procedures.* (i) Section 141.172(a)(3) of this chapter—How the State will approve a more representative annual data set than the data set determined under §141.172 (a)(1) or (2) of this chapter for the purpose of determining applicability of the requirements of §141.172 of this chapter.

(ii) Section 141.172(b)(5) of this chapter—How the State will approve a method to calculate the logs of inactivation for viruses for a system that uses either chloramines or ozone for primary disinfection.

(iii) Section 141.172(c) of this chapter—How the State will consult with PWSs to evaluate modifications to disinfection practice.

(iv) Section 141.173(b) of this chapter—For filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, how the State will determine that a public water system may use a filtration technology if the PWS demonstrates to the State, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of §141.172(b) of this chapter, consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts. For a system that makes this demonstration, how the State will set turbidity performance requirements that the system must meet 95 percent of the time and that the system may not exceed at any time at a level that consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

(h) *Requirements for States to adopt 40 CFR part 141, subpart L.* In addition to the general primacy requirements elsewhere in this part, including the requirement that State regulations be at least as stringent as federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart L, must contain a description of how the State will accomplish the following program requirements:

(1) Section 141.64(b)(2) of this chapter (interim treatment requirements). Determine any interim treatment requirements for those systems electing to install GAC or membrane filtration and granted additional time to comply with §141.64 of this chapter.

(2) Section 141.130(c) of this chapter (qualification of operators). Qualify operators of public water systems subject to 40 CFR part 141, subpart L. Qualification requirements established for operators of systems subject to 40 CFR part 141, subpart H—Filtration and Disinfection may be used in whole or in part to establish operator qualification requirements for meeting 40 CFR part 141, subpart L requirements if the State determines that the 40 CFR part 141, subpart H requirements are appropriate and applicable for meeting subpart L requirements.

(3) Section 141.131(c)(2) of this chapter (DPD colorimetric test kits). Approve DPD colorimetric test kits for free and total chlorine measurements. State approval granted under §141.74(a)(2) of this chapter for the use of DPD colorimetric test kits for free chlorine testing is acceptable for the use of DPD test kits in measuring free chlorine residuals as required in 40 CFR part 141, subpart L.

(4) Sections 141.131(c)(3) and (d) of this chapter (State approval of parties to conduct analyses). Approve parties to conduct pH, bromide, alkalinity, and residual disinfectant concentration measurements. The State's process for approving parties performing water quality measurements for systems subject to 40 CFR part 141, subpart H requirements in paragraph (b)(2)(i)(D) of this section may be used for approving

parties measuring water quality parameters for systems subject to subpart L requirements, if the State determines the process is appropriate and applicable.

(5) Section 141.132(a)(2) of this chapter (multiple wells as a single source). Define the criteria to use to determine if multiple wells are being drawn from a single aquifer and therefore be considered a single source for compliance with monitoring requirements.

(6) Approve alternate minimum TOC removal (Step 2) requirements, as allowed under the provisions of §141.135(b) of this chapter.

(i) *Requirements for States to adopt 40 CFR part 141, §141.76 Recycle provisions.* In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that the State provisions are no less stringent than the federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, §141.76 Recycle Provisions must contain the information specified in this paragraph:

(1) *State practices or procedures.* (i) Section 141.76(d) of this chapter—States must have the proper rules and authority to use Sanitary Surveys, comprehensive performance evaluations (CPEs), other inspections, or other activities to evaluate recycle data maintained by systems under §141.76(d) of this chapter and require modifications to recycle practices.

(ii) [Reserved]

(2) [Reserved]

(j) An application for approval of a State program revision which adopts the requirements specified in §§141.11, 141.23, 141.24, 141.32, 141.61 and 141.62 for an existing regulated contaminant must contain the following (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the federal requirements):

(1) If a State chooses to issue waivers from the monitoring requirements in §§141.23 and 141.24, the State shall describe the procedures and criteria, that it will use to review waiver applications and issue waiver determinations. The State shall provide the same information required in paragraph (e)(1)(i) and (ii) of this section. States may update their existing waiver criteria or use the requirements submitted under the National Primary Drinking Water Regulations for the inorganic and organic contaminants (*i.e.*, Phase II/V rule) in 16(e) of this section. States may simply note in their application any revisions to existing waiver criteria or note that the same procedures to issue waivers will be used.

(2) A monitoring plan by which the State will ensure all systems complete the required monitoring by the regulatory deadlines. States may update their existing monitoring plan or use the same monitoring plan submitted under the National Primary Drinking Water Regulations for the inorganic and organic contaminants (*i.e.*, Phase II/V rule) in 16(e) of this section. States may simply note in their application any revisions to an existing monitoring plan or note that the same monitoring plan will be used. The State must demonstrate that the monitoring plan is enforceable under State law.

(k) States establish the initial monitoring requirements for new systems and new sources. States must explain their initial monitoring schedules and how these monitoring schedules ensure that public water systems and sources comply with MCL's and monitoring requirements. States must also specify the time frame in which new systems will demonstrate compliance with the MCLs.

(l) An application for approval of a State program revision for radionuclides which adopts the requirements specified in §141.26(a)(2)(ii)(C) of this chapter must contain the following (in addition to the general primacy requirements enumerated in this part, including that State regulations be at least as stringent as the Federal requirements):

(1) If a State chooses to use grandfathered data in the manner described in §141.26(a)(2)(ii)(C) of this chapter, then the State must describe the procedures and criteria which it will use to make these determinations (whether distribution system or entry point sampling points are used).

(i) The decision criteria that the State will use to determine that data collected in the distribution system are

representative of the drinking water supplied from each entry point to the distribution system. These determinations must consider:

(A) All previous monitoring data.

(B) The variation in reported activity levels.

(C) Other factors affecting the representativeness of the data (e.g. geology).

(ii) [Reserved]

(2) A monitoring plan by which the State will assure all systems complete the required monitoring within the regulatory deadlines. States may update their existing monitoring plan or use the same monitoring plan submitted for the requirements in §142.16(e)(2) under the national primary drinking water regulations for the inorganic and organic contaminants (*i.e.* the phase II/V rules). States may note in their application any revision to an existing monitoring plan or note that the same monitoring plan will be used. The State must demonstrate that the monitoring plan is enforceable under State law.

(m) *Requirements for States to adopt 40 CFR part 141, subparts U and V.* In addition to the general primacy requirements elsewhere in this part, including the requirements that State regulations be at least as stringent as federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subparts U and V, must contain a description of how the State will implement a procedure for addressing modification of wholesale system and consecutive system monitoring on a case-by-case basis for part 141 subpart V outside the provisions of §141.29 of this chapter, if the State elects to use such an authority. The procedure must ensure that all systems have at least one compliance monitoring location.

(n) *Requirements for States to adopt 40 CFR part 141, subpart W.* In addition to the general primacy requirements elsewhere in this part, including the requirements that State regulations be at least as stringent as Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart W, must contain a description of how the State will accomplish the following program requirements where allowed in State programs.

(1) Approve an alternative to the *E. coli* levels that trigger *Cryptosporidium* monitoring by filtered systems serving fewer than 10,000 people, as described in §141.701(a)(5).

(2) Assess significant changes in the watershed and source water as part of the sanitary survey process and determine appropriate follow-up action for systems, as described in §141.711(d) of this chapter.

(3) Approve watershed control programs for the 0.5-log treatment credit in the microbial toolbox, as described in §141.716(a) of this chapter.

(4) Approve protocols for demonstration of performance treatment credits in the microbial toolbox, as allowed under §141.718(c) of this chapter.

(5) Approve protocols for alternative ozone and chlorine dioxide CT values in the microbial toolbox, as allowed under §141.720(c) of this chapter.

(6) Approve an alternative approach to UV reactor validation testing in the microbial toolbox, as allowed under §141.720(d)(2)(iii) of this chapter.

(o) *Requirements for States to adopt 40 CFR part 141, subpart S.* In addition to the general primacy requirements specified elsewhere in this part, including the requirement that State regulations are no less stringent than the Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart S, must contain the information specified in this paragraph (o).

(1) *Legal authority.* The application for primacy must demonstrate the State has:

(i) The authority contained in statute or regulation to ensure that ground water systems conduct source water monitoring under §§141.402(a)(2), 141.402(a)(3) and 141.402(a)(4)(ii)(A) of this chapter.

(ii) The authority contained in statute or regulation to ensure that ground water systems take the appropriate corrective actions including interim measures, if necessary, needed to address significant deficiencies.

(iii) The authority contained in statute or regulation to ensure that ground water systems take the appropriate corrective actions, including interim

measures if necessary, to address any source water fecal contamination identified during source water monitoring under § 141.402 of this chapter.

(iv) The authority contained in statute or regulation to ensure that ground water systems consult with the State regarding corrective action(s).

(2) *State practices or procedures for sanitary surveys.* In addition to the general requirements for sanitary surveys contained in § 142.10(b)(2), a primacy application must describe how the State will implement a sanitary survey program that meets the requirements of paragraph (o)(2)(i) of this section. A "sanitary survey," as conducted by the State, includes but is not limited to, an onsite review of the water source(s) (identifying sources of contamination by using results of source water assessments or other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

(i) The State must conduct sanitary surveys that address the eight sanitary survey components listed in this section no less frequently than every three years for community water systems, except as provided in paragraph (o)(2)(iii) of this section, and every five years for non-community water systems. The State may conduct more frequent sanitary surveys for any system. The initial sanitary survey for each community water system must be conducted by December 31, 2012, unless the system meets the requirements of paragraph (o)(2)(iii) of this section. The initial sanitary survey for each community water system that meets the requirements of paragraph (o)(2)(iii) of this section and for each non-community water system must be conducted by December 31, 2014. The sanitary survey must include an evaluation of each of the following elements as applicable:

(A) Source,

(B) Treatment,

(C) Distribution system,

(D) Finished water storage,

(E) Pumps, pump facilities, and controls,

(F) Monitoring, reporting, and data verification,

(G) System management and operation, and

(H) Operator compliance with State requirements.

(ii) The State may use a phased review process to meet the requirements of (o)(2)(i) of this section if all the applicable elements of paragraphs (o)(2)(i)(A) through (o)(2)(i)(H) of this section are evaluated within the required interval.

(iii) The State may conduct sanitary surveys once every five years for community water systems if the system either provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer for all its ground water sources, or if it has an outstanding performance record, as determined by the State and documented in previous sanitary surveys and has no history of total coliform MCL or monitoring violations under § 141.21 of this chapter since the last sanitary survey. In its primacy application, the State must describe how it will determine whether a community water system has an outstanding performance record.

(iv) The State must define and describe in its primacy application at least one specific significant deficiency in each of the eight sanitary survey elements in paragraphs (o)(2)(i)(A) through (o)(2)(i)(H) of this section. Significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the State determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

(v) As a condition of primacy, the State must provide ground water systems with written notice describing any significant deficiencies no later than 30 days after the State identifies the significant deficiency. The notice may specify corrective actions and deadlines for completion of corrective actions. The State may provide the written notice at the time of the sanitary survey.

(3) *State practices or procedures for source water microbial monitoring.* The

State's primacy application must include a description of the following:

(i) The criteria the State will use under §§141.402(a)(2)(i) and 141.402(d)(2) of this chapter for extending the 24-hour time limit for a system to collect a ground water source sample to comply with the source water monitoring requirements.

(ii) The criteria the State will use under §§141.402(a)(5)(i) and 141.402(a)(5)(ii) of this chapter to determine whether the cause of the total coliform-positive sample taken under §141.21(a) of this chapter is directly related to the distribution system.

(iii) The criteria the State will use for determining whether to invalidate a fecal indicator-positive ground water source sample under §141.402(d)(1)(ii) of this chapter.

(iv) The criteria the State will use to allow source water microbial monitoring at a location after treatment under §141.402(e)(1) of this chapter.

(4) *State practices or procedures for treatment technique requirements.* As a condition of primacy, the State must verify that significant deficiencies or source water fecal contamination have been addressed. The State must verify within 30 days after the ground water system has reported to the State that it has completed corrective action. The State must verify either through written confirmation from the ground water system or a site visit by the State. Written notice from the ground water system under §141.405(a)(2) of this chapter may serve as this verification. The State's primacy application must include the following:

(i) The process the State will use to determine that a ground water system achieves at least a 4-log treatment of viruses (using inactivation, removal, or a combination of inactivation and removal) before or at the first customer for a ground water source for systems that are not subject to the source water monitoring requirements of §141.402(a) of this chapter because the ground water system has informed the State that it provides at least 4-log treatment of viruses.

(ii) The process the State will use to determine the minimum residual disinfectant concentration the system must provide prior to the first customer for systems using chemical disinfection.

(iii) The State-approved alternative technologies that ground water systems may use alone or in combination with other approved technologies to achieve at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer for a ground water source.

(iv) The monitoring and compliance requirements the State will require for ground water systems treating to at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of inactivation and removal) before or at the first customer for State-approved alternative treatment technologies.

(v) The monitoring, compliance and membrane integrity testing requirements the State will require to demonstrate virus removal for ground water systems using membrane filtration technologies.

(vi) The criteria, including public health-based considerations and incorporating on-site investigations and source water monitoring results the State will use to determine if a ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of inactivation and removal) before or at the first customer.

(p) *Requirements for States to adopt 40 CFR part 141, Subpart T—Enhanced Filtration and Disinfection—Systems Serving Fewer Than 10,000 People.* In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State provisions are no less stringent than the Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, Subpart T—Enhanced Filtration and Disinfection—Systems Serving Fewer than 10,000 People, must contain the information specified in this paragraph:

(1) *Enforceable requirements.* States must have rules or other authority to require systems to participate in a Comprehensive Technical Assistance (CTA) activity, the performance improvement phase of the Composite Correction Program (CCP). The State

must determine whether a CTA must be conducted based on results of a CPE which indicate the potential for improved performance, and a finding by the State that the system is able to receive and implement technical assistance provided through the CTA. A CPE is a thorough review and analysis of a system's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance. During the CTA phase, the system must identify and systematically address factors limiting performance. The CTA is a combination of utilizing CPE results as a basis for follow-up, implementing process control priority-setting techniques and maintaining long-term involvement to systematically train staff and administrators.

(2) *State practices or procedures.* (i) Section 141.530–141.536—How the State will approve a more representative data set for optional TTHM and HAA5 monitoring and profiling.

(ii) Section 141.535 of this chapter—How the State will approve a method to calculate the logs of inactivation for viruses for a system that uses either chloramines, ozone, or chlorine dioxide for primary disinfection.

(iii) Section 141.542 of this chapter—How the State will consult with the system and approve significant changes to disinfection practices.

(iv) Section 141.552 of this chapter—For filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, how the State will determine that a public water system may use a filtration technology if the PWS demonstrates to the State, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of §141.72(b) of this chapter, consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts. For a system that makes this demonstration, how the State will set turbidity performance requirements that the system must meet 95 percent of the time and that the system may not exceed at any time at a level that consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

(q) *Requirements for States to adopt 40 CFR part 141 subpart Y—Revised Total Coliform Rule.* In addition to the general primacy requirements elsewhere in this part, including the requirements that State regulations be at least as stringent as federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart Y, must contain the information specified in this paragraph (q).

(1) In their application to EPA for approval to implement the federal requirements, the primacy application must indicate what baseline and reduced monitoring provisions of 40 CFR part 141, subpart Y the State will adopt and must describe how they will implement 40 CFR part 141, subpart Y in these areas so that EPA can be assured that implementation plans meet the minimum requirements of the rule.

(2) The State's application for primacy for subpart Y must include a written description for each provision included in paragraphs (q)(2)(i) through (ix) of this section.

(i) Sample Siting Plans—The frequency and process used to review and revise sample siting plans in accordance with 40 CFR part 141, subpart Y to determine adequacy.

(ii) Reduced Monitoring Criteria—An indication of whether the State will adopt the reduced monitoring provisions of 40 CFR part 141, subpart Y. If the State adopts the reduced monitoring provisions, it must describe the specific types or categories of water systems that will be covered by reduced monitoring and whether the State will use all or a reduced set of the criteria specified in §§141.854(h)(2) and 141.855(d)(1)(iii) of this chapter. For each of the reduced monitoring criteria, the State must describe how the criterion will be evaluated to determine when systems qualify.

(iii) Assessments and Corrective Actions—The process for implementing the new assessment and corrective action phase of the rule, including the elements in paragraphs (q)(2)(iii)(A) through (D) of this section.

(A) Elements of Level 1 and Level 2 assessments. This must include an explanation of how the State will ensure that Level 2 assessments provide a more detailed examination of the system (including the system's monitoring and operational practices) than do Level 1 assessments through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices.

(B) Examples of sanitary defects.

(C) Examples of assessment forms or formats.

(D) Methods that systems may use to consult with the State on appropriate corrective actions.

(iv) Invalidation of routine and repeat samples collected under 40 CFR part 141, subpart Y—The criteria and process for invalidating total coliform and *E. coli*-positive samples under 40 CFR part 141, subpart Y. This description must include criteria to determine if a sample was improperly processed by the laboratory, reflects a domestic or other non-distribution system plumbing problem or reflects circumstances or conditions that do not reflect water quality in the distribution system.

(v) Approval of individuals allowed to conduct Level 2 assessments under 40 CFR part 141, subpart Y—The criteria and process for approval of individuals allowed to conduct Level 2 assessments under 40 CFR part 141, subpart Y.

(vi) Special monitoring evaluation—The procedure for performing special monitoring evaluations during sanitary surveys for ground water systems serving 1,000 or fewer people to determine whether systems are on an appropriate monitoring schedule.

(vii) Seasonal systems—How the State will identify seasonal systems, how the State will determine when systems on less than monthly monitoring must monitor, and what start-up provisions seasonal system must meet under 40 CFR part 141, subpart Y.

(viii) Additional criteria for reduced monitoring—How the State will require systems on reduced monitoring to demonstrate:

(A) Continuous disinfection entering the distribution system and a residual in the distribution system.

(B) Cross connection control.

(C) Other enhancements to water system barriers.

(ix) Criteria for extending the 24-hour period for collecting repeat samples.—Under §§ 141.858(a) and 141.853(c)(2) of this chapter, criteria for systems to use in lieu of case-by-case decisions to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample, or to extend the 24-hour limit for collection of samples following invalidation. If the State elects to use only case-by-case waivers, the State does not need to develop and submit criteria.

[54 FR 15188, Apr. 17, 1989]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 142.16, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 142.17 Review of State programs and procedures for withdrawal of approved primacy programs.

(a)(1) At least annually the Administrator shall review, with respect to each State determined to have primary enforcement responsibility, the compliance of the State with the requirements set forth in 40 CFR part 142, subpart B, and the approved State primacy program. At the time of this review, the State shall notify the Administrator of any State-initiated program changes (*i.e.*, changes other than those to adopt new or revised EPA regulations), and of any transfer of all or part of its program from the approved State agency to any other State agency.

(2) When, on the basis of the Administrator's review or other available information, the Administrator determines that a State no longer meets the requirements set forth in 40 CFR part 142, subpart B, the Administrator shall initiate proceedings to withdraw primacy approval. Among the factors the Administrator intends to consider as relevant to this determination are the following, where appropriate: whether

the State has requested and has been granted, or is awaiting EPA's decision on, an extension under §142.12(b)(2) of the deadlines for meeting those requirements; and whether the State is taking corrective actions that may have been required by the Administrator. The Administrator shall notify the State in writing that EPA is initiating primacy withdrawal proceedings and shall summarize in the notice the information available that indicates that the State no longer meets such requirements.

(3) The State notified pursuant to paragraph (a)(2) of this section may, within 30 days of receiving the Administrator's notice, submit to the Administrator evidence demonstrating that the State continues to meet the requirements for primary enforcement responsibility.

(4) After reviewing the submission of the State, if any, made pursuant to paragraph (a)(3) of this section, the Administrator shall make a final determination either that the State no longer meets the requirements of 40 CFR part 142, subpart B, or that the State continues to meet those requirements, and shall notify the State of his or her determination. Any final determination that the State no longer meets the requirements of 40 CFR part 142, subpart B, shall not become effective except as provided in §142.13.

(b) If a State which has primary enforcement responsibility decides to relinquish that authority, it may do so by notifying the Administrator in writing of the State's decision at least 90 days before the effective date of the decision.

[54 FR 52140, Dec. 20, 1989, as amended at 60 FR 33661, June 28, 1995]

§142.18 EPA review of State monitoring determinations.

(a) A Regional Administrator may annul a State monitoring determination for the types of determinations identified in §§141.23(b), 141.23(c), 141.24(f), 141.24(h), and 141.40(n) in accordance with the procedures in paragraph (b) of this section.

(b) When information available to a Regional Administrator, such as the results of an annual review, indicate a State determination fails to apply the standards of the approved State program, he may propose to annul the State monitoring determination by sending the State and the affected PWS a draft Rescission Order. The draft order shall:

(1) Identify the PWS, the State determination, and the provisions at issue;

(2) Explain why the State determination is not in compliance with the State program and must be changed; and

(3) Describe the actions and terms of operation the PWS will be required to implement.

(c) The State and PWS shall have 60 days to comment on the draft Rescission Order.

(d) The Regional Administrator may not issue a Rescission Order to impose conditions less stringent than those imposed by the State.

(e) The Regional Administrator shall also provide an opportunity for comment upon the draft Rescission Order, by

(1) Publishing a notice in a newspaper in general circulation in communities served by the affected system; and

(2) Providing 30 days for public comment on the draft order.

(f) The State shall demonstrate that the determination is reasonable, based on its approved State program.

(g) The Regional Administrator shall decide within 120 days after issuance of the draft Rescission Order to:

(1) Issue the Rescission Order as drafted;

(2) Issue a modified Rescission Order; or

(3) Cancel the Rescission Order.

(h) The Regional Administrator shall set forth the reasons for his decision, including a responsiveness summary addressing significant comments from the State, the PWS and the public.

(i) The Regional Administrator shall send a notice of his final decision to the State, the PWS and all parties who commented upon the draft Rescission Order.

(j) The Rescission Order shall remain in effect until cancelled by the Regional Administrator. The Regional Administrator may cancel a Rescission

Order at any time, so long as he notifies those who commented on the draft order.

(k) The Regional Administrator may not delegate the signature authority for a final Rescission Order or the cancellation of an order.

(l) Violation of the actions, or terms of operation, required by a Rescission Order is a violation of the Safe Drinking Water Act.

[56 FR 3595, Jan. 30, 1991]

§ 142.19 EPA review of State implementation of national primary drinking water regulations for lead and copper.

(a) Pursuant to the procedures in this section, the Regional Administrator may review state determinations establishing corrosion control or source water treatment requirements for lead or copper and may issue an order establishing federal treatment requirements for a public water system pursuant to §141.82 (d) and (f) and §141.83(b) (2) and (4) where the Regional Administrator finds that:

(1) A State has failed to issue a treatment determination by the applicable deadline;

(2) A State has abused its discretion in making corrosion control or source water treatment determinations in a substantial number of cases or in cases affecting a substantial population, or

(3) The technical aspects of State's determination would be indefensible in an expected federal enforcement action taken against a system.

(b) If the Regional Administrator determines that review of state determination(s) under this section may be appropriate, he shall request the State to forward to EPA the state determination and all information that was considered by the State in making its determination, including public comments, if any, within 60 days of the Regional Adminstrator's request.

(c) Proposed review of state determinations:

(1) Where the Regional Administrator finds that review of a state determination under paragraph (a) of this section is appropriate, he shall issue a proposed review order which shall:

(i) Identify the public water system(s) affected, the State determination being reviewed and the provisions of state and/or federal law at issue;

(ii) Identify the determination that the State failed to carry out by the applicable deadline, or identify the particular provisions of the State determination which, in the Regional Administrator's judgment, fail to carry out properly applicable treatment requirements, and explain the basis for the Regional Administrator's conclusion;

(iii) Identify the treatment requirements which the Regional Administrator proposes to apply to the affected system(s), and explain the basis for the proposed requirements;

(iv) Request public comment on the proposed order and the supporting record.

(2) The Regional Administrator shall provide notice of the proposed review order by:

(i) Mailing the proposed order to the affected public water system(s), the state agency whose order is being reviewed, and any other parties of interest known to the Regional Administrator; and

(ii) Publishing a copy of the proposed order in a newspaper of general circulation in the affected communities.

(3) The Regional Administrator shall make available for public inspection during the comment period the record supporting the proposed order, which shall include all of the information submitted by the State to EPA under paragraph (b) of this section, all other studies, monitoring data and other information considered by the Agency in developing the proposed order.

(d) Final review order:

(1) Based upon review of all information obtained regarding the proposed review order, including public comments, the Regional Administrator shall issue a final review order within 120 days after issuance of the proposed order which affirms, modifies, or withdraws the proposed order. The Regional Administrator may extend the time period for issuing the final order for good cause. If the final order modifies or withdraws the proposed order, the final order shall explain the reasons supporting the change.

(2) The record of the final order shall consist of the record supporting the

proposed order, all public comments, all other information considered by the Regional Administrator in issuing the final order and a document responding to all significant public comments submitted on the proposed order. If new points are raised or new material supplied during the public comment period, the Regional Administrator may support the responses on those matters by adding new materials to the record. The record shall be complete when the final order is issued.

(3) Notice of the final order shall be provided by mailing the final order to the affected system(s), the State, and all parties who commented on the proposed order.

(4) Upon issuance of the final order, its terms constitute requirements of the national primary drinking water regulation for lead and/or copper until such time as the Regional Administrator issues a new order (which may include recision of the previous order) pursuant to the procedures in this section. Such requirements shall supersede any inconsistent treatment requirements established by the State pursuant to the national primary drinking water regulations for lead and copper.

(5) The Regional Administrator may not issue a final order to impose conditions less stringent than those imposed by the State.

(e) The Regional Administrator may not delegate authority to sign the final order under this section.

(f) Final action of the Regional Administrator under paragraph (d) of this section shall constitute action of the Administrator for purposes of 42 U.S.C. §300j–7(a)(2).

[56 FR 26563, June 7, 1991]

Subpart C—Review of State-Issued Variances and Exemptions

§ 142.20 State-issued variances and exemptions under Section 1415(a) and Section 1416 of the Act.

(a) States with primary enforcement responsibility may issue variances to public water systems (other than small system variances) from the requirements of primary drinking water regulations under conditions and in a manner which are not less stringent than the requirements under Section 1415(a) of the Act. In States that do not have primary enforcement responsibility, variances may be granted by the Administrator pursuant to Subpart E of this part.

(1) A State must document all findings that are required under Section 1415(a) of the Act.

(2) If a State prescribes a schedule pursuant to section 1415(a) of the Act requiring compliance with a contaminant level for which the variance is granted later than five years from the date of issuance of the variance the State must—

(i) Document its rationale for the extended compliance schedule;

(ii) Discuss the rationale for the extended compliance schedule in the required public notice and opportunity for public hearing; and

(iii) Provide the shortest practicable time schedule feasible under the circumstances.

(b) States with primary enforcement responsibility may issue exemptions from the requirements of primary drinking water regulations under conditions and in a manner which are not less stringent than the requirements under Section 1416 of the Act. In States that do not have primary enforcement responsibility, exemptions may be granted by the Administrator pursuant to Subpart F of this part.

(1) A State must document all findings that are required under Section 1416 of the Act:

(i) Before finding that management and restructuring changes cannot be made, a State must consider the following measures, and the availability of State Revolving Loan Fund assistance, or any other Federal or State program, that is reasonably likely to be available within the period of the exemption to implement these measures:

(A) Consideration of rate increases, accounting changes, the appointment of a State-certified operator under the State's Operator Certification program, contractual agreements for joint operation with one or more public water systems;

(B) Activities consistent with the State's Capacity Development Strategy to help the public water system acquire and maintain technical, financial, and managerial capacity to come into compliance with the Act; and

(C) Ownership changes, physical consolidation with another public water system, or other feasible and appropriate means of consolidation which would result in compliance with the Act;

(ii) The State must consider the availability of an alternative source of water, including the feasibility of partnerships with neighboring public water systems, as identified by the public water system or by the State consistent with the Capacity Development Strategy.

(2) In the case of a public water system serving a population of not more than 3,300 persons and which needs financial assistance for the necessary improvements under the initial compliance schedule, an exemption granted by the State under section 1416(b)(2)(B)(i) or (ii) of the Act may be renewed for one or more additional 2-year periods, but not to exceed a total of 6 additional years, only if the State establishes that the public water system is taking all practicable steps to meet the requirements of Section 1416(b)(2)(B) of the Act and the established compliance schedule to achieve full compliance with the contaminant level or treatment technique for which the exemption was granted. A State must document its findings in granting an extension under this paragraph.

[63 FR 43847, Aug. 14, 1998]

§ 142.21 State consideration of a variance or exemption request.

A State with primary enforcement responsibility shall act on any variance or exemption request submitted to it, within 90 days of receipt of the request.

§ 142.22 Review of State variances, exemptions and schedules.

(a) Not later than 18 months after the effective date of the interim national primary drinking water regulations the Administrator shall complete a comprehensive review of the variances and exemptions granted (and schedules prescribed pursuant thereto) by the States with primary enforcement responsibility during the one-year period beginning on such effective date. The Administrator shall conduct such subsequent reviews of exemptions and schedules as he deems necessary to carry out the purposes of this title, but at least one review shall be completed within each 3-year period following the completion of the first review under this paragraph.

(b) Notice of a proposed review shall be published in the FEDERAL REGISTER. Such notice shall (1) provide information respecting the location of data and other information respecting the variances and exemptions to be reviewed (including data and other information concerning new scientific matters bearing on such variances and exemptions), and (2) advise of the opportunity to submit comments on the variances and exemptions reviewed and on the need for continuing them. Upon completion of any such review, the Administrator shall publish in the FEDERAL REGISTER the results of his review, together with findings responsive to any comments submitted in connection with such review.

§ 142.23 Notice to State.

(a) If the Administrator finds that a State has, in a substantial number of instances, abused its discretion in granting variances or exemptions under section 1415(a) or section 1416(a) of the Act or failed to prescribe schedules in accordance with section 1415(a) or section 1416(b) of the Act, he shall notify the State of his findings. Such notice shall:

(1) Identify each public water system for which the finding was made;

(2) Specify the reasons for the finding; and

(3) As appropriate, propose revocation of specific variances or exemptions, or propose revised schedules for specific public water systems.

(b) The Administrator shall also notify the State of a public hearing to be held on the provisions of the notice required by paragraph (a) of this section. Such notice shall specify the time and

location for the hearing. If, upon notification of a finding by the Administrator, the State takes adequate corrective action, the Administrator shall rescind his notice to the State of a public hearing, provided that the Administrator is notified of the corrective action prior to the hearing.

(c) The Administrator shall publish notice of the public hearing in the FEDERAL REGISTER and in a newspaper or newspapers of general circulation in the involved State including a summary of the findings made pursuant to paragraph (a) of this section, a statement of the time and location for the hearing, and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing.

(d) Hearings convened pursuant to paragraphs (b) and (c) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly and expeditious manner. The hearing officer shall have authority to call witnesses, receive oral and written testimony and take such other action as may be necessary to assure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer shall forward the record of the hearing to the Administrator.

(e) Within 180 days after the date notice is given pursuant to paragraph (b) of this section, the Administrator shall:

(1) Rescind the finding for which the notice was given and promptly notify the State of such rescission, or

(2) Promulgate with any modifications as appropriate such revocation and revised schedules proposed in such notice and promptly notify the State of such action.

(f) A revocation or revised schedule shall take effect 90 days after the State is notified under paragraph (e)(2) of this section.

§ 142.24 Administrator's rescission.

If, upon notification of a finding by the Administrator under §142.23, the State takes adequate corrective action before the effective date of the revocation or revised schedule, the Administrator shall rescind the application of his finding to that variance, exemption or schedule.

Subpart D—Federal Enforcement

§ 142.30 Failure by State to assure enforcement.

(a) The Administrator shall notify a State and the appropriate supplier of water whenever he finds during a period in which the State has primary enforcement responsibility for public water systems that a public water system within such State is not in compliance with any primary drinking water regulation contained in part 141 of this chapter or with any schedule or other requirements imposed pursuant to a variance or exemption granted under section 1415 or 1416 of the Act: *Provided,* That the State will be deemed to have been notified of a violation referred to in a report submitted by the State.

(b) The Administrator shall provide advice and technical assistance to such State and public water system as may be appropriate to bring the system into compliance by the earliest feasible time.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§ 142.31 [Reserved]

§ 142.32 Petition for public hearing.

(a) If the Administrator makes a finding of noncompliance pursuant to §142.30 with respect to a public water system in a State which has primary enforcement responsibility, the Administrator may, for the purpose of assisting that State in carrying out such responsibility and upon the petition of such State or public water system or persons served by such system, hold, after appropriate notice, public hearings for the purpose of gathering information as described in §142.33.

(b) A petition for a public hearing pursuant to paragraph (a) of this section shall be filed with the Administrator and shall include the following information:

(1) The name, address and telephone number of the individual or other entity requesting a hearing.

(2) If the petition is filed by a person other than the State or public water

system, a statement that the person is served by the system.

(3) A brief statement of information that the requesting person intends to submit at the requested hearing.

(4) The signature of the individual submitting the petition; or, if the petition is filed on behalf of a State, public water system or other entity, the signature of a responsible official of the State or other entity.

§ 142.33 Public hearing.

(a) If the Administrator grants the petition for public hearing, he shall give appropriate public notice of such hearing. Such notice shall be by publication in the FEDERAL REGISTER and in a newspaper of general circulation or by other appropriate communications media covering the area served by such public water system.

(b) A hearing officer designated by the Administrator shall gather during the public hearing information from technical or other experts, Federal, State, or other public officials, representatives of the public water system, persons served by the system, and other interested persons on:

(1) The ways in which the system can within the earliest feasible time be brought into compliance, and

(2) The means for the maximum feasible protection of the public health during any period in which such system is not in compliance.

(c) On the basis of the hearing and other available information the Administrator shall issue recommendations which shall be sent to the State and public water system and shall be made available to the public and communications media.

§ 142.34 Entry and inspection of public water systems.

(a) Any supplier of water or other person subject to a national primary drinking water regulation shall, at any time, allow the Administrator, or a designated representative of the Administrator, upon presenting appropriate credentials and a written notice of inspection, to enter any establishment, facility or other property of such supplier or other person to determine whether such supplier or other person has acted or is acting in compliance with the requirements of the Act or subchapter D of this chapter. Such inspection may include inspection, at reasonable times, of records, files, papers, processes, controls and facilities, or testing of any feature of a public water system, including its raw water source.

(b) Prior to entry into any establishment, facility or other property within a State which has primary enforcement responsibility, the Administrator shall notify, in writing, the State agency charged with responsibility for safe drinking water of his intention to make such entry and shall include in his notification a statement of reasons for such entry. The Administrator shall, upon a showing by the State agency that such an entry will be detrimental to the administration of the State's program of primary enforcement responsibility, take such showing into consideration in determining whether to make such entry. The Administrator shall in any event offer the State agency the opportunity of having a representative accompany the Administrator or his representative on such entry.

(c) No State agency which receives notice under paragraph (b) of this section may use the information contained in the notice to inform the person whose property is proposed to be entered of the proposed entry; if a State so uses such information, notice to the agency under paragraph (b) of this section is not required for subsequent inspections of public water systems until such time as the Administrator determines that the agency has provided him satisfactory assurances that it will no longer so use information contained in a notice received under paragraph (b) of this section.

Subpart E—Variances Issued by the Administrator Under Section 1415(a) of the Act

§ 142.40 Requirements for a variance.

(a) The Administrator may grant one or more variances to any public water system within a State that does not have primary enforcement responsibility from any requirement respecting a maximum contaminant level of an

applicable national primary drinking water regulation upon a finding that:

(1) Because of characteristics of the raw water sources which are reasonably available to the system, the system cannot meet the requirements respecting the maximum contaminant levels of such drinking water regulations despite application of the best technology, treatment techniques, or other means, which the Administrator finds are generally available (taking costs into consideration); and

(2) The granting of a variance will not result in an unreasonable risk to the health of persons served by the system.

(b) The Administrator may grant one or more variances to any public water system within a State that does not have primary enforcement responsibility from any requirement of a specified treatment technique of an applicable national primary drinking water regulation upon a finding that the public water system applying for the variance has demonstrated that such treatment technique is not necessary to protect the health of persons because of the nature of the raw water source of such system.

§ 142.41 Variance request.

A supplier of water may request the granting of a variance pursuant to this subpart for a public water system within a State that does not have primary enforcement responsibility by submitting a request for a variance in writing to the Administrator. Suppliers of water may submit a joint request for variances when they seek similar variances under similar circumstances. Any written request for a variance or variances shall include the following information:

(a) The nature and duration of variance requested.

(b) Relevant analytical results of water quality sampling of the system, including results of relevant tests conducted pursuant to the requirements of the national primary drinking water regulations.

(c) For any request made under § 142.40(a):

(1) Explanation in full and evidence of the best available treatment technology and techniques.

(2) Economic and legal factors relevant to ability to comply.

(3) Analytical results of raw water quality relevant to the variance request.

(4) A proposed compliance schedule, including the date each step toward compliance will be achieved. Such schedule shall include as a minimum the following dates:

(i) Date by which arrangement for alternative raw water source or improvement of existing raw water source will be completed.

(ii) Date of initiation of the connection of the alternative raw water source or improvement of existing raw water source.

(iii) Date by which final compliance is to be achieved.

(5) A plan for the provision of safe drinking water in the case of an excessive rise in the contaminant level for which the variance is requested.

(6) A plan for additional interim control measures during the effective period of variance.

(d) For any request made under § 142.40(b), a statement that the system will perform monitoring and other reasonable requirements prescribed by the Administrator as a condition to the variance.

(e) Other information, if any, believed to be pertinent by the applicant.

(f) Such other information as the Administrator may require.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§ 142.42 Consideration of a variance request.

(a) The Administrator shall act on any variance request submitted pursuant to § 142.41 within 90 days of receipt of the request.

(b) In his consideration of whether the public water system is unable to comply with a contaminant level required by the national primary drinking water regulations because of the nature of the raw water source, the Administrator shall consider such factors as the following:

(1) The availability and effectiveness of treatment methods for the contaminant for which the variance is requested.

(2) Cost and other economic considerations such as implementing treatment, improving the quality of the source water or using an alternate source.

(c) A variance may be issued to a public water system on the condition that the public water system install the best technology, treatment techniques, or other means, which the Administrator finds are available (taking costs into consideration) and based upon an evaluation satisfactory to the Administrator that indicates that alternative sources of water are not reasonably available to the public water system.

(d) In his consideration of whether a public water system should be granted a variance to a required treatment technique because such treatment is unnecessary to protect the public health, the Administrator shall consider such factors as the following:

(1) Quality of the water source including water quality data and pertinent sources of pollution.

(2) Source protection measures employed by the public water system.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987; 63 FR 43847, Aug. 14, 1998]

§ 142.43 Disposition of a variance request.

(a) If the Administrator decides to deny the application for a variance, he shall notify the applicant of his intention to issue a denial. Such notice shall include a statement of reasons for the proposed denial, and shall offer the applicant an opportunity to present, within 30 days of receipt of the notice, additional information or argument to the Administrator. The Administrator shall make a final determination on the request within 30 days after receiving any such additional information or argument. If no additional information or argument is submitted by the applicant the application shall be denied.

(b) If the Administrator proposes to grant a variance request submitted pursuant to § 142.41, he shall notify the applicant of his decision in writing. Such notice shall identify the variance, the facility covered, and shall specify the period of time for which the variance will be effective.

(1) For the type of variance specified in § 142.40(a) such notice shall provide that the variance will be terminated when the system comes into compliance with the applicable regulation, and may be terminated upon a finding by the Administrator that the system has failed to comply with any requirements of a final schedule issued pursuant to § 142.44.

(2) For the type of variance specified in § 142.40(b) such notice shall provide that the variance may be terminated at any time upon a finding that the nature of the raw water source is such that the specified treatment technique for which the variance was granted is necessary to protect the health of persons or upon a finding that the public water system has failed to comply with monitoring and other requirements prescribed by the Administrator as a condition to the granting of the variance.

(c) For a variance specified in § 142.40(a)(1) the Administrator shall propose a schedule for:

(1) Compliance (including increments of progress) by the public water system with each contaminant level requirement covered by the variance; and,

(2) Implementation by the public water system of such additional control measures as the Administrator may require for each contaminant covered by the variance.

(d) The proposed schedule for compliance shall specify dates by which steps towards compliance are to be taken, including at the minimum, where applicable:

(1) Date by which arrangement for an alternative raw water source or improvement of existing raw water source will be completed.

(2) Date of initiation of the connection for the alternative raw water source or improvement of the existing raw water source.

(3) Date by which final compliance is to be achieved.

(e) The proposed schedule may, if the public water system has no access to an alternative raw water source, and can effect or anticipate no adequate improvement of the existing raw water

source, specify an indefinite time period for compliance until a new and effective treatment technology is developed at which time a new compliance schedule shall be prescribed by the Administrator.

(f) The proposed schedule for implementation of additional interim control measures during the period of variance shall specify interim treatment techniques, methods and equipment, and dates by which steps toward meeting the additional interim control measures are to be met.

(g) The schedule shall be prescribed by the Administrator at the time of granting of the variance, subsequent to provision of opportunity for hearing pursuant to § 142.44.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§ 142.44 Public hearings on variances and schedules.

(a) Before a variance and schedule proposed by the Administrator pursuant to § 142.43 may take effect, the Administrator shall provide notice and opportunity for public hearing on the variance and schedule. A notice given pursuant to the preceding sentence may cover the granting of more than one variance and a hearing held pursuant to such notice shall include each of the variances covered by the notice.

(b) Public notice of an opportunity for hearing on a variance and schedule shall be circulated in a manner designed to inform interested and potentially interested persons of the proposed variance and schedule, and shall include at least the following:

(1) Posting of a notice in the principal post office of each municipality or area served by the public water system, and publishing of a notice in a newspaper or newspapers of general circulation in the area served by the public water system; and

(2) Mailing of a notice to the agency of the State in which the system is located which is responsible for the State's water supply program, and to other appropriate State or local agencies at the Administrator's discretion.

(3) Such notice shall include a summary of the proposed variance and schedule and shall inform interested persons that they may request a public hearing on the proposed variance and schedule.

(c) Requests for hearing may be submitted by any interested person other than a Federal agency. Frivolous or insubstantial requests for hearing may be denied by the Administrator. Requests must be submitted to the Administrator within 30 days after issuance of the public notices provided for in paragraph (b) of this section. Such requests shall include the following information:

(1) The name, address and telephone number of the individual, organization or other entity requesting a hearing;

(2) A brief statement of the interest of the person making the request in the proposed variance and schedule, and of information that the requester intends to submit at such hearing;

(3) The signature of the individual making the request, or, if the request is made on behalf of an organization or other entity, the signature of a responsible official of the organization or other entity.

(d) The Administrator shall give notice in the manner set forth in paragraph (b) of this section of any hearing to be held pursuant to a request submitted by an interested person or on his own motion. Notice of the hearing shall also be sent to the persons requesting the hearing, if any. Notice of the hearing shall include a statement of the purpose of the hearing, information regarding the time and location for the hearing, and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing. At least one hearing location specified in the public notice shall be within the involved State. Notice of hearing shall be given not less than 15 days prior to the time scheduled for the hearing.

(e) A hearing convened pursuant to paragraph (d) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly and expeditious manner. The hearing officer shall have authority to call witnesses, receive oral and written testimony and take such other action as may be necessary to assure the fair and

efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer shall forward the record of the hearing to the Administrator.

(f) The variance and schedule shall become effective 30 days after notice of opportunity for hearing is given pursuant to paragraph (b) of this section if no timely request for hearing is submitted and the Administrator does not determine to hold a public hearing on his own motion.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§ 142.45 Action after hearing.

Within 30 days after the termination of the public hearing held pursuant to §142.44, the Administrator shall, taking into consideration information obtained during such hearing and relevant information, confirm, revise or rescind the proposed variance and schedule.

[52 FR 20675, June 2, 1987]

§ 142.46 Alternative treatment techniques.

The Administrator may grant a variance from any treatment technique requirement of a national primary drinking water regulation to a supplier of water, whether or not the public water system for which the variance is requested is located in a State which has primary enforcement responsibility, upon a showing from any person that an alternative treatment technique not included in such requirement is at least as efficient in lowering the level of the contaminant with respect to which such requirements was prescribed. A variance under this paragraph shall be conditioned on the use of the alternative treatment technique which is the basis of the variance.

Subpart F—Exemptions Issued by the Administrator

§ 142.50 Requirements for an exemption.

(a) The Administrator may exempt any public water system within a State that does not have primary enforcement responsibility from any requirement regarding a maximum contaminant level or any treatment technique requirement, or from both, of an applicable national primary drinking water regulation upon a finding that—

(1) Due to compelling factors (which may include economic factors, including qualification of the public water system as a system serving a disadvantaged community pursuant to section 1452(d) of the Act), the public water system is unable to comply with such contaminant level or treatment technique requirement or to implement measures to develop an alternative source of water supply;

(2) The public water system was in operation on the effective date of such contaminant level or treatment technique requirement, or for a public water system that was not in operation by that date, no reasonable alternative source of drinking water is available to such new public water system;

(3) The granting of the exemption will not result in an unreasonable risk to health; and

(4) Management or restructuring changes (or both), as provided in §142.20(b)(1)(i), cannot reasonably be made that will result in compliance with the applicable national primary drinking water regulation or, if compliance cannot be achieved, improve the quality of the drinking water.

(b) No exemption shall be granted unless the public water system establishes that the public water system is taking all practicable steps to meet the standard; and

(1) The public water system cannot meet the standard without capital improvements which cannot be completed prior to the date established pursuant to Section 1412(b)(10) of the Act;

(2) In the case of a public water system which needs financial assistance for the necessary improvements, the public water system has entered into an agreement to obtain such financial assistance or assistance pursuant to Section 1452 of the Act, or any other Federal or State program that is reasonably likely to be available within the period of the exemption; or

(3) The public water system has entered into an enforceable agreement to become a part of a regional public water system.

(c) A public water system may not receive an exemption under this subpart if the public water system was granted a variance under Section 1415(e) of the Act.

[63 FR 43847, Aug. 14, 1998]

§ 142.51 Exemption request.

A supplier of water may request the granting of an exemption pursuant to this subpart for a public water system within a State that does not have primary enforcement responsibility by submitting a request for exemption in writing to the Administrator. Suppliers of water may submit a joint request for exemptions when they seek similar exemptions under similar circumstances. Any written request for an exemption or exemptions shall include the following information:

(a) The nature and duration of exemption requested.

(b) Relevant analytical results of water quality sampling of the system, including results of relevant tests conducted pursuant to the requirements of the national primary drinking water regulations.

(c) Explanation of the compelling factors such as time or economic factors which prevent such system from achieving compliance.

(d) Other information, if any, believed by the applicant to be pertinent to the application.

(e) A proposed compliance schedule, including the date when each step toward compliance will be achieved.

(f) Such other information as the Administrator may require.

§ 142.52 Consideration of an exemption request.

(a) The Administrator shall act on any exemption request submitted pursuant to §142.51 within 90 days of receipt of the request.

(b) In his consideration of whether the public water system is unable to comply due to compelling factors, the Administrator shall consider such factors as the following:

(1) Construction, installation, or modification of the treatment equipment or systems.

(2) The time needed to put into operation a new treatment facility to replace an existing system which is not in compliance.

(3) Economic feasibility of compliance.

§ 142.53 Disposition of an exemption request.

(a) If the Administrator decides to deny the application for an exemption, he shall notify the applicant of his intention to issue a denial. Such notice shall include a statement of reasons for the proposed denial, and shall offer the applicant an opportunity to present, within 30 days of receipt of the notice, additional information or argument to the Administrator. The Administrator shall make a final determination on the request within 30 days after receiving any such additional information or argument. If no additional information or argument is submitted by the applicant, the application shall be denied.

(b) If the Administrator grants an exemption request submitted pursuant to §142.51, he shall notify the applicant of his decision in writing. Such notice shall identify the facility covered, and shall specify the termination date of the exemption. Such notice shall provide that the exemption will be terminated when the system comes into compliance with the applicable regulation, and may be terminated upon a finding by the Administrator that the system has failed to comply with any requirements of a final schedule issued pursuant to §142.55.

(c) The Administrator shall propose a schedule for:

(1) Compliance (including increments of progress or measures to develop an alternative source of water supply) by the public water system with each contaminant level requirement or treatment technique requirement with respect to which the exemption was granted; and

(2) Implementation by the public water system of such control measures as the Administrator may require for each contaminant covered by the exemption.

(d) The schedule shall be prescribed by the Administrator at the time the exemption is granted, subsequent to

provision of opportunity for hearing pursuant to § 142.54.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987; 63 FR 43848, Aug. 14, 1998]

§ 142.54 Public hearings on exemption schedules.

(a) Before a schedule proposed by the Administrator pursuant to § 142.53 may take effect, the Administrator shall provide notice and opportunity for public hearing on the schedule. A notice given pursuant to the preceding sentence may cover the proposal of more than one such schedule and a hearing held pursuant to such notice shall include each of the schedules covered by the notice.

(b) Public notice of an opportunity for hearing on an exemption schedule shall be circulated in a manner designed to inform interested and potentially interested persons of the proposed schedule, and shall include at least the following:

(1) Posting of a notice in the principal post office of each municipality or area served by the public water system, and publishing of a notice in a newspaper or newspapers of general circulation in the area served by the public water system.

(2) Mailing of a notice to the agency of the State in which the system is located which is responsible for the State's water supply program and to other appropriate State or local agencies at the Administrator's discretion.

(3) Such notices shall include a summary of the proposed schedule and shall inform interested persons that they may request a public hearing on the proposed schedule.

(c) Requests for hearing may be submitted by any interested person other than a Federal agency. Frivolous or insubstantial requests for hearing may be denied by the Administrator. Requests must be submitted to the Administrator within 30 days after issuance of the public notices provided for in paragraph (b) of this section. Such requests shall include the following information:

(1) The name, address and telephone number of the individual, organization or other entity requesting a hearing;

(2) A brief statement of the interest of the person making the request in the proposed schedule and of information that the requesting person intends to submit at such hearing; and

(3) The signature of the individual making the request, or, if the request is made on behalf of an organization or other entity, the signature of a responsible official of the organization or other entity.

(d) The Administrator shall give notice in the manner set forth in paragraph (b) of this section of any hearing to be held pursuant to a request submitted by an interested person or on his own motion. Notice of the hearing shall also be sent to the person requesting the hearing, if any. Notice of the hearing shall include a statement of the purpose of the hearing, information regarding the time and location of the hearing, and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing. At least one hearing location specified in the public notice shall be within the involved State. Notice of the hearing shall be given not less than 15 days prior to the time scheduled for the hearing.

(e) A hearing convened pursuant to paragraph (d) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly and expeditious manner. The hearing officer shall have authority to call witnesses, receive oral and written testimony and take such action as may be necessary to assure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer shall forward the record of the hearing to the Administrator.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§ 142.55 Final schedule.

(a) Within 30 days after the termination of the public hearing pursuant to § 142.54, the Administrator shall, taking into consideration information obtained during such hearing, revise the proposed schedule as necessary and

prescribe the final schedule for compliance and interim measures for the public water system granted an exemption under § 142.52.

(b) Such schedule must require compliance with each contaminant level and treatment technique requirement with respect to which the exemption was granted as expeditiously as practicable but not later than 3 years after the otherwise applicable compliance date established in section 1412(b)(10) of the Act.

(c) [Reserved]

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987; 63 FR 43848, Aug. 14, 1998]

§ 142.56 Extension of date for compliance.

In the case of a public water system which serves a population of not more than 3,300 persons and which needs financial assistance for the necessary improvements, an exemption granted under § 142.50(b) (1) or (2) may be renewed for one or more additional 2-year periods, but not to exceed a total of 6 additional years, if the public water system establishes that the public water system is taking all practicable steps to meet the requirements of section 1416(b)(2)(B) of the Act and the established compliance schedule.

[63 FR 43848, Aug. 14, 1998]

§ 142.57 Bottled water, point-of-use, and point-of-entry devices.

(a) A State may require a public water system to use bottled water, point-of-use devices, or point-of-entry devices as a condition of granting an exemption from the requirements of §§ 141.61 (a) and (c), and 141.62 of this chapter.

(b) Public water systems using bottled water as a condition of obtaining an exemption from the requirements of §§ 141.61 (a) and (c) and 141.62(b) must meet the requirements in § 142.62(g).

(c) Public water systems that use point-of-use or point-of-entry devices as a condition for receiving an exemption must meet the requirements in § 141.62(h).

[56 FR 3596, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991]

Subpart G—Identification of Best Technology, Treatment Techniques or Other Means Generally Available

§ 142.60 Variances from the maximum contaminant level for total trihalomethanes.

(a) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best technology, treatment techiques or other means generally available for achieving compliance with the maximum contaminant level for total trihalomethanes (§ 141.12(c)):

(1) Use of chloramines as an alternate or supplemental disinfectant or oxidant.

(2) Use of chlorine dioxide as an alternate or supplemental disinfectant or oxidant.

(3) Improved existing clarification for THM precursor reduction.

(4) Moving the point of chlorination to reduce TTHM formation and, where necessary, substituting for the use of chlorine as a pre-oxidant chloramines, chlorine dioxide or potassium permanganate.

(5) Use of powdered activated carbon for THM precursor or TTHM reduction seasonally or intermittently at dosages not to exceed 10 mg/L on an annual average basis.

(b) The Administrator in a state that does not have primary enforcement responsibility or a state with primary enforcement responsibility (primacy state) that issues variances shall require a community water system to install and/or use any treatment method identified in § 142.60(a) as a condition for granting a variance unless the Administrator or primacy state determines that such treatment method identified in § 142.60(a) is not available and effective for TTHM control for the system. A treatment method shall not be considered to be "available and effective" for an individual system if the treatment method would not be technically appropriate and technically feasible for that system or would only result in a marginal reduction in TTHM for the system. If, upon application by a system for a variance, the Administrator or primacy state that issues variances determines that none

of the treatment methods identified in §142.60(a) is available and effective for the system, that system shall be entitled to a variance under the provisions of section 1415(a)(1)(A) of the Act. The Administrator's or primacy state's determination as to the availability and effectiveness of such treatment methods shall be based upon studies by the system and other relevant information. If a system submits information intending to demonstrate that a treatment method is not available and effective for TTHM control for that system, the Administrator or primacy state shall make a finding whether this information supports a decision that such treatment method is not available and effective for that system before requiring installation and/or use of such treatment method.

(c) Pursuant to §142.43 (c) through (g) or corresponding state regulations, the Administrator or primacy state that issues variances shall issue a schedule of compliance that may require the system being granted the variance to examine the following treatment methods (1) to determine the probability that any of these methods will significantly reduce the level of TTHM for that system, and (2) if such probability exists, to determine whether any of these methods are technically feasible and economically reasonable, and that the TTHM reductions obtained will be commensurate with the costs incurred with the installation and use of such treatment methods for that system:

Introduction of off-line water storage for THM precursor reduction.

Aeration for TTHM reduction, where geographically and environmentally appropriate.

Introduction of clarification where not currently practiced.

Consideration of alternative sources of raw water.

Use of ozone as an alternate or supplemental disinfectant or oxidant.

(d) If the Administrator or primacy state that issues variances determines that a treatment method identified in §142.60(c) is technically feasible, economically reasonable and will achieve TTHM reductions commensurate with the costs incurred with the installation and/or use of such treatment method for the system, the Administrator or primacy state shall require the system to install and/or use that treatment method in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The Administrator's or primacy state's determination shall be based upon studies by the system and other relevant information. In no event shall the Administrator require a system to install and/or use a treatment method not described in §142.60 (a) or (c) to obtain or maintain a variance from the TTHM Rule or in connection with any variance compliance schedule.

[48 FR 8414, Feb. 28, 1983]

§142.61 Variances from the maximum contaminant level for fluoride.

(a) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best technology, treatment techniques or other means generally available for achieving compliance with the Maximum Contaminant Level for fluoride.

(1) Activated alumina absorption, centrally applied

(2) Reverse osmosis, centrally applied

(b) The Administrator in a state that does not have primary enforcement responsibility or a state with primary enforcement responsibility (primacy state) that issues variances shall require a community water system to install and/or use any treatment method identified in §142.61(a) as a condition for granting a variance unless the Administrator or the primacy state determines that such treatment method identified in §142.61(a) as a condition for granting a variance is not available and effective for fluoride control for the system. A treatment method shall not be considered to be "available and effective" for an individual system if the treatment method would not be technically appropriate and technically feasible for that system. If, upon application by a system for a variance, the Administrator or primacy state that issues variances determines that none of the treatment methods identified in §142.61(a) are available and effective for the system, that system shall be entitled to a variance under the provisions of section

1415(a)(1)(A) of the Act. The Administrator's or primacy state's determination as to the availability and effectiveness of such treatment methods shall be based upon studies by the system and other relevant information. If a system submits information to demonstrate that a treatment method is not available and effective for fluoride control for that system, the Administrator or primacy state shall make a finding whether this information supports a decision that such treatment method is not available and effective for that system before requiring installation and/or use of such treatment method.

(c) Pursuant to §142.43 (c)–(g) or corresponding state regulations, the Administrator or primacy state that issues variances shall issue a schedule of compliance that may require the system being granted the variance to examine the following treatment methods (1) to determine the probability that any of these methods will significantly reduce the level of fluoride for that system, and (2) if such probability exists, to determine whether any of these methods are technically feasible and economically reasonable, and that the fluoride reductions obtained will be commensurate with the costs incurred with the installation and use of such treatment methods for that system:

(1) Modification of lime softening;
(2) Alum coagulation;
(3) Electrodialysis;
(4) Anion exchange resins;
(5) Well field management;
(6) Alternate source;
(7) Regionalization.

(d) If the Administrator or primary state that issues variances determines that a treatment method identified in §142.61(c) or other treatment method is technically feasible, economically reasonable, and will achieve fluoride reductions commensurate with the costs incurred with the installation and/or use of such treatment method for the system, the Administrator or primacy state shall require the system to install and/or use that treatment method in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The Administrator's or primacy state's determination shall be based upon studies by the system and other relevant information.

[51 FR 11411, Apr. 2, 1986]

§ 142.62 Variances and exemptions from the maximum contaminant levels for organic and inorganic chemicals.

(a) The Administrator, pursuant to section 1415(a)(1)(A) of the Act hereby identifies the technologies listed in paragraphs (a)(1) through (a)(54) of this section as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for organic chemicals listed in §141.61 (a) and (c):

Contaminant	Best available technologies		
	PTA [1]	GAC [2]	OX [3]
(1) Benzene	X	X	
(2) Carbon tetrachloride	X	X	
(3) 1,2-Dichloroethane	X	X	
(4) Trichloroethylene	X	X	
(5) para-Dichlorobenzene	X	X	
(6) 1,1-Dichloroethylene	X	X	
(7) 1,1,1-Trichloroethane	X	X	
(8) Vinyl chloride	X		
(9) cis-1,2-Dichloroethylene	X	X	
(10) 1,2-Dichloropropane	X	X	
(11) Ethylbenzene	X	X	
(12) Monochlorobenzene	X	X	
(13) o-Dichlorobenzene	X	X	
(14) Styrene	X	X	
(15) Tetrachloroethylene	X	X	
(16) Toluene	X	X	
(17) trans-1,2-Dichloroethylene	X	X	
(18) Xylense (total)	X	X	
(19) Alachlor		X	
(20) Aldicarb		X	
(21) Aldicarb sulfoxide		X	
(22) Aldicarb sulfone		X	

Contaminant	Best available technologies		
	PTA[1]	GAC[2]	OX[3]
(23) Atrazine		X	
(24) Carbofuran		X	
(25) Chlordane		X	
(26) Dibromochloropropane	X	X	
(27) 2,4-D		X	
(28) Ethylene dibromide	X	X	
(29) Heptachlor		X	
(30) Heptachlor epoxide		X	
(31) Lindane		X	
(32) Methoxychlor		X	
(33) PCBs		X	
(34) Pentachlorophenol		X	
(35) Toxaphene		X	
(36) 2,4,5-TP		X	
(37) Benzo[a]pyrene		X	
(38) Dalapon		X	
(39) Dichloromethane	X		
(40) Di(2-ethylhexyl)adipate	X	X	
(41) Di(2-ethylhexyl)phthalate		X	
(42) Dinoseb		X	
(43) Diquat		X	
(44) Endothall		X	
(45) Endrin		X	
(46) Glyphosate			X
(47) Hexachlorobenzene		X	
(48) Hexachlorocyclopentadiene	X	X	
(49) Oxamyl (Vydate)		X	
(50) Picloram		X	
(51) Simazine		X	
(52) 1,2,4-Trichlorobenzene	X	X	
(53) 1,1,2-Trichloroethane	X	X	
(54) 2,3,7,8-TCDD (Dioxin)		X	

[1] Packed Tower Aeration
[2] Granular Activated Carbon
[3] Oxidation (Chlorination or Ozonation)

(b) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the inorganic chemicals listed in §141.62:

BAT FOR INORGANIC COMPOUNDS LISTED IN §141.62(b)

Chemical name	BAT(s)
Antimony	2,7
Arsenic[4]	[5] 1, 2, 5, 6, 7, 9, 12
Asbestos	2,3,8
Barium	5,6,7,9
Beryllium	1,2,5,6,7
Cadmium	2,5,6,7
Chromium	2,5,6[2],7
Cyanide	5,7,10
Mercury	2[1],4,6[1],7[1]
Nickel	5,6,7
Nitrite	5,7,9
Nitrate	5,7
Selenium	1,2[3],6,7,9
Thallium	1,5

[1] BAT only if influent Hg concentrations ≤10μg/1.
[2] BAT for Chromium III only.
[3] BAT for Selenium IV only.
[4] BATs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.
[5] To obtain high removals, iron to arsenic ratio must be at least 20:1.

Key to BATS in Table

1 = Activated Alumina
2 = Coagulation/Filtration (not BAT for systems <500 service connections)
3 = Direct and Diatomite Filtration
4 = Granular Activated Carbon
5 = Ion Exchange
6 = Lime Softening (not BAT for systems <500 service connections)
7 = Reverse Osmosis
8 = Corrosion Control
9 = Electrodialysis
10 = Chlorine
11 = Ultraviolet
12 = Oxidation/Filtration

(c) A State shall require community water systems and non-transient, non-community water systems to install and/or use any treatment method identified in §142.62 (a) and (b) as a condition for granting a variance except as provided in paragraph (d) of this section. If, after the system's installation

of the treatment method, the system cannot meet the MCL, that system shall be eligible for a variance under the provisions of section 1415(a)(1)(A) of the Act.

(d) If a system can demonstrate through comprehensive engineering assessments, which may include pilot plant studies, that the treament methods identified in §142.62 (a) and (b) would only achieve a *de minimis* reduction in contaminants, the State may issue a schedule of compliance that requires the system being granted the variance to examine other treatment methods as a condition of obtaining the variance.

(e) If the State determines that a treatment method identified in paragraph (d) of this section is technically feasible, the Administrator or primacy State may require the system to install and/or use that treatment method in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The State's determination shall be based upon studies by the system and other relevant information.

(f) The State may require a public water system to use bottled water, point-of-use devices, point-of-entry devices or other means as a condition of granting a variance or an exemption from the requirements of §§141.61 (a) and (c) and 141.62, to avoid an unreasonable risk to health. The State may require a public water system to use bottled water and point-of-use devices or other means, *but not point-of-entry devices,* as a condition for granting an exemption from corrosion control treatment requirements for lead and copper in §§141.81 and 141.82 to avoid an unreasonable risk to health. The State may require a public water system to use point-of-entry devices as a condition for granting an exemption from the source water and lead service line replacement requirements for lead and copper under §§141.83 or 141.84 to avoid an unreasonable risk to health.

(g) Public water systems that use bottled water as a condition for receiving a variance or an exemption from the requirements of §§141.61 (a) and (c) and 141.62, or an exemption from the requirements of §§141.81–141.84 must meet the requirements specified in either paragraph (g)(1) or (g)(2) and paragraph (g)(3) of this section:

(1) The Administrator or primacy State must require and approve a monitoring program for bottled water. The public water system must develop and put in place a monitoring program that provides reasonable assurances that the bottled water meets all MCLs. The public water system must monitor a representative sample of the bottled water for all contaminants regulated under §§141.61 (a) and (c) and 141.62 during the first three-month period that it supplies the bottled water to the public, and annually thereafter. Results of the monitoring program shall be provided to the State annually.

(2) The public water system must receive a certification from the bottled water company that the bottled water supplied has been taken from an "approved source" as defined in 21 CFR 129.3(a); the bottled water company has conducted monitoring in accordance with 21 CFR 129.80(g) (1) through (3); and the bottled water does not exceed any MCLs or quality limits as set out in 21 CFR 165.110, part 110, and part 129. The public water system shall provide the certification to the State the first quarter after it supplies bottled water and annually thereafter. At the State's option a public water system may satisfy the requirements of this subsection if an approved monitoring program is already in place in another State.

(3) The public water system is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system via door-to-door bottled water delivery.

(h) Public water systems that use point-of-use or point-of-entry devices as a condition for obtaining a variance or an exemption from NPDWRs must meet the following requirements:

(1) It is the responsibility of the public water system to operate and maintain the point-of-use and/or point-of-entry treatment system.

(2) Before point-of-use or point-of-entry devices are installed, the public water system must obtain the approval of a monitoring plan which ensures

that the devices provide health protection equivalent to that provided by central water treatment.

(3) The public water system must apply effective technology under a State-approved plan. The microbiological safety of the water must be maintained at all times.

(4) The State must require adequate certification of performance, field testing, and, if not included in the certification process, a rigorous engineering design review of the point-of-use and/or point-of-entry devices.

(5) The design and application of the point-of-use and/or point-of-entry devices must consider the potential for increasing concentrations of heterotrophic bacteria in water treated with activated carbon. It may be necessary to use frequent backwashing, post-contactor disinfection, and Heterotrophic Plate Count monitoring to ensure that the microbiological safety of the water is not compromised.

(6) The State must be assured that buildings connected to the system have sufficient point-of-use or point-of-entry devices that are properly installed, maintained, and monitored such that all consumers will be protected.

(7) In requiring the use of a point-of-entry device as a condition for granting an exemption from the treatment requirements for lead and copper under §§141.83 or 141.84, the State must be assured that use of the device will not cause increased corrosion of lead and copper bearing materials located between the device and the tap that could increase contaminant levels at the tap.

[56 FR 3596, Jan. 30, 1991, as amended at 56 FR 26563, June 7, 1991; 57 FR 31848, July 17, 1992; 59 FR 33864, June 30, 1994; 59 FR 34325, July 1, 1994; 66FR 7066, Jan. 22, 2001; 69 FR 38857, June 29, 2004]

§ 142.63 Variances and exemptions from the maximum contaminant level for total coliforms.

(a) No variances or exemptions from the maximum contaminant level in §141.63 of this chapter are permitted.

(b) EPA has stayed this section as it relates to the total coliform MCL of §141.63(a) of this chapter for systems that demonstrate to the State that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. This stay is applicable until March 31, 2016, at which time the total coliform MCL is no longer applicable.

[54 FR 27568, June 29, 1989, as amended at 56 FR 1557, Jan. 15, 1991; 78 FR 10365, Feb. 13, 2013]

§ 142.64 Variances and exemptions from the requirements of part 141, subpart H—Filtration and Disinfection.

(a) No variances from the requirements in part 141, subpart H are permitted.

(b) No exemptions from the requirements in §141.72 (a)(3) and (b)(2) to provide disinfection are permitted.

[54 FR 27540, June 29, 1989]

§ 142.65 Variances and exemptions from the maximum contaminant levels for radionuclides.

(a)(1) Variances and exemptions from the maximum contaminant levels for combined radium-226 and radium-228, uranium, gross alpha particle activity (excluding Radon and Uranium), and beta particle and photon radioactivity.

(i) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in §141.66(b), (c), (d), and (e) of this chapter, for the purposes of issuing variances and exemptions, as shown in Table A to this paragraph.

TABLE A—BAT FOR RADIONUCLIDES LISTED IN §141.66

Contaminant	BAT
Combined radium-226 and radium-228.	Ion exchange, reverse osmosis, lime softening.
Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration.
Gross alpha particle activity (excluding radon and uranium).	Reverse osmosis.
Beta particle and photon radioactivity.	Ion exchange, reverse osmosis.

(ii) In addition, the Administrator hereby identifies the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in §141.66(b), (c), (d), and (e) of this chapter, for the purposes of issuing variances and exemptions to small drinking water systems, defined here as those serving 10,000 persons or fewer, as shown in Table C to this paragraph.

TABLE B—LIST OF SMALL SYSTEMS COMPLIANCE TECHNOLOGIES FOR RADIONUCLIDES AND LIMITATIONS TO USE

Unit technologies	Limitations (see footnotes)	Operator skill level required [1]	Raw water quality range & considerations [1]
1. Ion exchange (IE)	(a)	Intermediate	All ground waters.
2. Point of use (POU [2]) IE	(b)	Basic	All ground waters.
3. Reverse osmosis (RO)	(c)	Advanced	Surface waters usually require pre-filtration.
4. POU [2] RO	(b)	Basic	Surface waters usually require pre-filtration.
5. Lime softening	(d)	Advanced	All waters.
6. Green sand filtration	(e)	Basic.	
7. Co-precipitation with barium sulfate	(f)	Intermediate to Advanced	Ground waters with suitable water quality.
8. Electrodialysis/electrodialysis reversal		Basic to Intermediate	All ground waters.
9. Pre-formed hydrous manganese oxide filtration.	(g)	Intermediate	All ground waters.
10. Activated alumina	(a), (h)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency.
11. Enhanced coagulation/filtration	(i)	Advanced	Can treat a wide range of water qualities.

[1] National Research Council (NRC). Safe Water from Every Tap: Improving Water Service to Small Communities. National Academy Press. Washington, D.C. 1997.

[2] A POU, or "point-of-use" technology is a treatment device installed at a single tap used for the purpose of reducing contaminants in drinking water at that one tap. POU devices are typically installed at the kitchen tap. See the April 21, 2000 NODA for more details.

Limitations Footnotes: Technologies for Radionuclides:

[a] The regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology.

[b] When POU devices are used for compliance, programs for long-term operation, maintenance, and monitoring must be provided by water utility to ensure proper performance.

[c] Reject water disposal options should be carefully considered before choosing this technology. See other RO limitations described in the SWTR compliance technologies table.

[d] The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for small surface water systems.

[e] Removal efficiencies can vary depending on water quality.

[f] This technology may be very limited in application to small systems. Since the process requires static mixing, detention basins, and filtration, it is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.

[g] This technology is most applicable to small systems that already have filtration in place.

[h] Handling of chemicals required during regeneration and pH adjustment may be too difficult for small systems without an adequately trained operator.

[i] Assumes modification to a coagulation/filtration process already in place.

TABLE C—BAT FOR SMALL COMMUNITY WATER SYSTEMS FOR THE RADIONUCLIDES LISTED IN §141.66

Contaminant	Compliance technologies [1] for system size categories (population served)		
	25–500	501–3,300	3,300–10,000
Combined radium-226 and radium-228	1, 2, 3, 4, 5, 6, 7, 8, 9 ..	1, 2, 3, 4, 5, 6, 7, 8, 9 ..	1, 2, 3, 4, 5, 6, 7, 8, 9.
Gross alpha particle activity	3, 4	3, 4	3, 4.
Beta particle activity and photon activity	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4.
Uranium	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11	1, 2, 3, 4, 5, 10, 11.

[1] NOTE: Numbers correspond to those technologies found listed in the table B to this paragraph.

(2) A State shall require community water systems to install and/or use any treatment technology identified in Table A to this section, or in the case of small water systems (those serving 10,000 persons or fewer), Table B and

Table C of this section, as a condition for granting a variance except as provided in paragraph (a)(3) of this section. If, after the system's installation of the treatment technology, the system cannot meet the MCL, that system shall be eligible for a variance under the provisions of section 1415(a)(1)(A) of the Act.

(3) If a community water system can demonstrate through comprehensive engineering assessments, which may include pilot plant studies, that the treatment technologies identified in this section would only achieve a *de minimus* reduction in the contaminant level, the State may issue a schedule of compliance that requires the system being granted the variance to examine other treatment technologies as a condition of obtaining the variance.

(4) If the State determines that a treatment technology identified under paragraph (a)(3) of this section is technically feasible, the Administrator or primacy State may require the system to install and/or use that treatment technology in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The State's determination shall be based upon studies by the system and other relevant information.

(5) The State may require a community water system to use bottled water, point-of-use devices, point-of-entry devices or other means as a condition of granting a variance or an exemption from the requirements of § 141.66 of this chapter, to avoid an unreasonable risk to health.

(6) Community water systems that use bottled water as a condition for receiving a variance or an exemption from the requirements of § 141.66 of this chapter must meet the requirements specified in either § 142.62(g)(1) or § 142.62(g)(2) and (g)(3).

(7) Community water systems that use point-of-use or point-of-entry devices as a condition for obtaining a variance or an exemption from the radionuclides NPDWRs must meet the conditions in § 142.62(h)(1) through (h)(6).

(b) [Reserved]

[65 FR 76751, Dec. 7, 2000]

Subpart H—Indian Tribes

SOURCE: 53 FR 37411, Sept. 26, 1988, unless otherwise noted.

§ 142.72 Requirements for Tribal eligibility.

The Administrator is authorized to treat an Indian tribe as eligible to apply for primary enforcement for the Public Water System Program and the authority to waive the mailing requirements of § 141.155(a) if it meets the following criteria:

(a) The Indian Tribe is recognized by the Secretary of the Interior.

(b) The Indian Tribe has a tribal governing body which is currently "carrying out substantial governmental duties and powers" over a defined area, (*i.e.,* is currently performing governmental functions to promote the health, safety, and welfare of the affected population within a defined geographic area).

(c) The Indian Tribe demonstrates that the functions to be performed in regulating the public water systems that the applicant intends to regulate are within the area of the Indian Tribal government's jurisdiction.

(d) The Indian Tribe is reasonably expected to be capable, in the Administrator's judgment, of administering (in a manner consistent with the terms and purposes of the Act and all applicable regulations) an effective Public Water System program.

[53 FR 37411, Sept. 26, 1988, as amended at 59 FR 64344, Dec. 14, 1994; 63 FR 44535, Aug. 19, 1998]

§ 142.76 Request by an Indian Tribe for a determination of eligibility.

An Indian Tribe may apply to the Administrator for a determination that it meets the criteria of section 1451 of the Act. The application shall be concise and describe how the Indian Tribe will meet each of the requirements of § 142.72. The application shall consist of the following information:

(a) A statement that the Tribe is recognized by the Secretary of the Interior.

(b) A descriptive statement demonstrating that the Tribal governing body is currently carrying out substantial governmental duties and powers

over a defined area. The statement should:

(1) Describe the form of the Tribal government;

(2) Describe the types of governmental functions currently performed by the Tribal governing body such as, but not limited to, the exercise of police powers affecting (or relating to) the health, safety, and welfare of the affected population; taxation; and the exercise of the power of eminent domain; and

(3) Identify the sources of the Tribal government's authority to carry out the governmental functions currently being performed.

(c) A map or legal description of the area over which the Indian Tribe asserts jurisdiction; a statement by the Tribal Attorney General (or equivalent official) which describes the basis for the Tribe's jurisdictional assertion (including the nature or subject matter of the asserted jurisdiction); a copy of those documents such as Tribal constitutions, by-laws, charters, executive orders, codes, ordinances, and/or resolutions which the Tribe believes are relevant to its assertions regarding jurisdiction; and a description of the locations of the public water systems the Tribe proposes to regulate.

(d) A narrative statement describing the capability of the Indian Tribe to administer an effective Public Water System program. The narrative statement should include:

(1) A description of the Indian Tribe's previous management experience which may include, the administration of programs and services authorized by the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450 *et seq.*), the Indian Mineral Development Act (25 U.S.C. 2101 *et seq.*), or the Indian Sanitation Facilities Construction Activity Act (42 U.S.C. 2004a).

(2) A list of existing environmental or public health programs administered by the Tribal governing body and a copy of related Tribal laws, regulations and policies.

(3) A description of the Indian Tribe's accounting and procurement systems.

(4) A description of the entity (or entities) which exercise the executive, legislative, and judicial functions of the Tribal government.

(5) A description of the existing, or proposed, agency of the Indian Tribe which will assume primary enforcement responsibility, including a description of the relationship between owners/operators of the public water systems and the agency.

(6) A description of the technical and administrative capabilities of the staff to administer and manage an effective Public Water System Program or a plan which proposes how the Tribe will acquire additional administrative and/or technical expertise. The plan must address how the Tribe will obtain the funds to acquire the additional administrative and technical expertise.

(e) The Administrator may, in his discretion, request further documentation necessary to support a Tribe's eligibility.

(f) If the Administrator has previously determined that a Tribe has met the prerequisites that make it eligible to assume a role similar to that of a state as provided by statute under the Safe Drinking Water Act, the Clean Water Act, or the Clean Air Act, then that Tribe need provide only that information unique to the Public Water System program (paragraphs (c), (d)(5) and (6) of this section).

[53 FR 37411, Sept. 26, 1988, as amended at 59 FR 64344, Dec. 14, 1994]

§ 142.78 Procedure for processing an Indian Tribe's application.

(a) The Administrator shall process a completed application of an Indian Tribe in a timely manner. He shall promptly notify the Indian Tribe of receipt of the application.

(b) A tribe that meets the requirements of § 141.72 of this chapter is eligible to apply for development grants and primacy enforcement responsibility for a Public Water System Program and associated funding under section 1443(a) of the Act and for primary enforcement responsibility for public water systems under section 1413 of the Act and for the authority to waive the mailing requirement of § 141.155(a) of this chapter.

[53 FR 37411 Sept. 26, 1988, as amended at 59 FR 64345, Dec. 14, 1994; 63 FR 71376, Dec. 28, 1998]

Subpart I—Administrator's Review of State Decisions that Implement Criteria Under Which Filtration Is Required

SOURCE: 54 FR 27540, June 29, 1989, unless otherwise noted.

§ 142.80 Review procedures.

(a) The Administrator may initiate a comprehensive review of the decisions made by States with primary enforcement responsibility to determine, in accordance with §141.71 of this chapter, if public water systems using surface water sources must provide filtration treatment. The Administrator shall complete this review within one year of its initiation and shall schedule subsequent reviews as (s)he deems necessary.

(b) EPA shall publish notice of a proposed review in the FEDERAL REGISTER. Such notice must:

(1) Provide information regarding the location of data and other information pertaining to the review to be conducted and other information including new scientific matter bearing on the application of the criteria for avoiding filtration; and

(2) Advise the public of the opportunity to submit comments.

(c) Upon completion of any such review, the Administrator shall notify each State affected by the results of the review and shall make the results available to the public.

§ 142.81 Notice to the State.

(a) If the Administrator finds through periodic review or other available information that a State (1) has abused its discretion in applying the criteria for avoiding filtration under §141.71 of this chapter in determining that a system does not have to provide filtration treatment, or (2) has failed to prescribe compliance schedules for those systems which must provide filtration in accordance with section 1412(b)(7)(C)(ii) of the Act, (s)he shall notify the State of these findings. Such notice shall:

(1) Identify each public water system for which the Administrator finds the State has abused its discretion;

(2) Specify the reasons for the finding;

(3) As appropriate, propose that the criteria of §141.71 of this chapter be applied properly to determine the need for a public water system to provide filtration treatment or propose a revised schedule for compliance by the public water system with the filtration treatment requirements;

(b) The Administrator shall also notify the State that a public hearing is to be held on the provisions of the notice required by paragraph (a) of this section. Such notice shall specify the time and location of the hearing. If, upon notification of a finding by the Administrator that the State has abused its discretion under §141.71 of this chapter, the State takes corrective action satisfactory to the Administrator, the Administrator may rescind the notice to the State of a public hearing.

(c) The Administrator shall publish notice of the public hearing in the FEDERAL REGISTER and in a newspaper of general circulation in the involved State, including a summary of the findings made pursuant to paragraph (a) of this section, a statement of the time and location for the hearing, and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing.

(d) Hearings convened pursuant to paragraphs (b) and (c) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly, and expeditious manner. The hearing officer shall have the authority to call witnesses, receive oral and written testimony, and take such other action as may be necessary to ensure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer may make a recommendation to the Administrator based on the testimony presented at the hearing and shall forward any such recommendation and the record of the hearing to the Administrator.

(e) Within 180 days after the date notice is given pursuant to paragraph (b) of this section, the Administrator shall:

(1) Rescind the notice to the State of a public hearing if the State takes corrective action satisfactory to the Administrator; or

(2) Rescind the finding for which the notice was given and promptly notify the State of such rescission; or

(3) Uphold the finding for which the notice was given. In this event, the Administrator shall revoke the State's decision that filtration was not required or revoke the compliance schedule approved by the State, and promulgate, as appropriate, with any appropriate modifications, a revised filtration decision or compliance schedule and promptly notify the State of such action.

(f) Revocation of a State's filtration decision or compliance schedule and/or promulgation of a revised filtration decision or compliance schedule shall take effect 90 days after the State is notified under paragraph (e)(3) of this section.

Subpart J [Reserved]

Subpart K—Variances for Small System

SOURCE: 63 FR 43848, Aug. 14, 1998, unless otherwise noted.

GENERAL PROVISIONS

§ 142.301 What is a small system variance?

Section 1415(e) of the Act authorizes the issuance of variances from the requirement to comply with a maximum contaminant level or treatment technique to systems serving fewer than 10,000 persons. The purpose of this subpart is to provide the procedures and criteria for obtaining these variances. The regulations in this subpart shall take effect on September 14, 1998.

§ 142.302 Who can issue a small system variance?

A small system variance under this subpart may only be issued by either:

(a) A State that is exercising primary enforcement responsibility under Subpart B for public water systems under the State's jurisdiction; or

(b) The Administrator, for a public water system in a State which does not have primary enforcement responsibility.

§ 142.303 Which size public water systems can receive a small system variance?

(a) A State exercising primary enforcement responsibility for public water systems (or the Administrator for other systems) may grant a small system variance to public water systems serving 3,300 or fewer persons.

(b) With the approval of the Administrator pursuant to §142.312, a State exercising primary enforcement responsibility for public water systems may grant a small system variance to public water systems serving more than 3,300 persons but fewer than 10,000 persons.

(c) In determining the number of persons served by the public water system, the State or Administrator must include persons served by consecutive systems. A small system variance granted to a public water system would also apply to any consecutive system served by it.

§ 142.304 For which of the regulatory requirements is a small system variance available?

(a) A small system variance is not available under this subpart for a national primary drinking water regulation for a microbial contaminant (including a bacterium, virus, or other organism) or an indicator or treatment technique for a microbial contaminant.

(b) A small system variance under this subpart is otherwise only available for compliance with a requirement specifying a maximum contaminant level or treatment technique for a contaminant with respect to which;

(1) a national primary drinking water regulation was promulgated on or after January 1, 1986; and

(2) the Administrator has published a small system variance technology pursuant to Section 1412(b)(15) of the Act.

NOTE TO PARAGRAPH (b)(1): Small system variances are not available for public water systems above the pre-1986 maximum contaminant level even if subsequently revised. If the Agency revises a pre-1986 maximum contaminant level and makes it more stringent, then a variance would be available for that contaminant, but only up to the pre-1986 maximum contaminant level.

§ 142.305 When can a small system variance be granted by a State?

No small system variance can be granted by a State until the later of the following:

(a) 90 days after the State proposes to grant the small system variance;

(b) If a State is proposing to grant a small system variance to a public water system serving 3,300 or fewer persons and the Administrator objects to the small system variance, the date on which the State makes the recommended modifications or responds in writing to each objection; or

(c) If a State is proposing to grant a small system variance to a public water system serving a population more than 3,300 and fewer than 10,000 persons, the date the Administrator approves the small system variance. The Administrator must approve or disapprove the variance within 90 days after it is submitted to the Administrator for review.

REVIEW OF SMALL SYSTEM VARIANCE APPLICATION

§ 142.306 What are the responsibilities of the public water system, State and the Administrator in ensuring that sufficient information is available and for evaluation of a small system variance application?

(a) A public water system requesting a small system variance must provide accurate and correct information to the State or the Administrator to issue a small system variance in accordance with this subpart. A State may assist a public water system in compiling information required for the State or the Administrator to issue a small system variance in accordance with this subpart.

(b) Based upon an application for a small system variance and other information, and before a small system variance may be proposed under this subpart, the State or the Administrator must find and document the following:

(1) The public water system is eligible for a small system variance pursuant to §§142.303 (*i.e.*, the system serves a population of fewer than 10,000 persons) and 142.304 (*i.e.*, the contaminant for which the small system variance is sought is not excluded from variance eligibility);

(2) The public water system cannot afford to comply, in accordance with the affordability criteria established by the State (or by the Administrator in States which do not have primary enforcement responsibility), with the national primary drinking water regulation for which a small system variance is sought, including by:

(i) Treatment;

(ii) Alternative sources of water supply;

(iii) Restructuring or consolidation changes, including ownership change and/or physical consolidation with another public water system; or

(iv) Obtaining financial assistance pursuant to Section 1452 of the Act or any other Federal or State program;

(3) The public water system meets the source water quality requirements for installing the small system variance technology developed pursuant to guidance published under section 1412(b)(15) of the Act;

(4) The public water system is financially and technically capable of installing, operating and maintaining the applicable small system variance technology; and

(5) The terms and conditions of the small system variance, as developed through compliance with §142.307, ensure adequate protection of human health, considering the following:

(i) The quality of the source water for the public water system; and

(ii) Removal efficiencies and expected useful life of the small system variance technology.

§ 142.307 What terms and conditions must be included in a small system variance?

(a) A State or the Administrator must clearly specify enforceable terms and conditions of a small system variance.

(b) The terms and conditions of a small system variance issued under this subpart must include, at a minimum, the following requirements:

(1) Proper and effective installation, operation and maintenance of the applicable small system variance technology in accordance with guidance

published by the Administrator pursuant to section 1412(b)(15) of the Act, taking into consideration any relevant source water characteristics and any other site-specific conditions that may affect proper and effective operation and maintenance of the technology;

(2) Monitoring requirements, for the contaminant for which a small system variance is sought, as specified in 40 CFR part 141; and

(3) Any other terms or conditions that are necessary to ensure adequate protection of public health, which may include:

(i) Public education requirements; and

(ii) Source water protection requirements.

(c) The State or the Administrator must establish a schedule for the public water system to comply with the terms and conditions of the small system variance which must include, at a minimum, the following requirements:

(1) Increments of progress, such as milestone dates for the public water system to apply for financial assistance and begin capital improvements;

(2) Quarterly reporting to the State or Administrator of the public water system's compliance with the terms and conditions of the small system variance;

(3) Schedule for the State or the Administrator to review the small system variance under paragraph (d) of this section; and

(4) Compliance with the terms and conditions of the small system variance as soon as practicable but not later than 3 years after the date on which the small system variance is granted. The Administrator or State may allow up to 2 additional years if the Administrator or State determines that additional time is necessary for the public water system to:

(i) Complete necessary capital improvements to comply with the small system variance technology, secure an alternative source of water, or restructure or consolidate; or

(ii) Obtain financial assistance provided pursuant to section 1452 of the Act or any other Federal or State program.

(d) The State or the Administrator must review each small system variance granted not less often than every 5 years after the compliance date established in the small system variance to determine whether the public water system continues to meet the eligibility criteria and remains eligible for the small system variance and is complying with the terms and conditions of the small system variance. If the public water system would no longer be eligible for a small system variance, the State or the Administrator must determine whether continuing the variance is in the public interest. If the State or the Administrator finds that continuing the variance is not in the public interest, the variance must be withdrawn.

PUBLIC PARTICIPATION

§ 142.308 What public notice is required before a State or the Administrator proposes to issue a small system variance?

(a) At least fifteen (15) days before the date of proposal, and at least thirty (30) days prior to a public meeting to discuss the proposed small system variance, the State, Administrator, or public water system as directed by the State or Administrator, must provide notice to all persons served by the public water system. For billed customers, identified in paragraph (a)(1) of this section, this notice must include the information listed in paragraph (c) of this section. For other persons regularly served by the system, identified in paragraph (a)(2) of this section, the notice shall include the information identified in paragraph (d) of this section. Notice must be provided to all persons served by:

(1) Direct mail or other home delivery to billed customers or other service connections, and

(2) Any other method reasonably calculated to notify, in a brief and concise manner, other persons regularly served by the system. Such methods may include publication in a local newspaper, posting in public places or delivery to community organizations.

(b) At the time of proposal, the State must publish a notice in the State equivalent to the FEDERAL REGISTER or a newspaper or newspapers of wide circulation in the State, or, in the case of the Administrator, in the FEDERAL

REGISTER. This notice shall include the information listed in paragraph (c) of this section.

(c) The notice in paragraphs (a)(1) and (b) of this section must include, at a minimum, the following:

(1) Identification of the contaminant[s] for which a small system variance is sought;

(2) A brief statement of the health effects associated with the contaminant[s] for which a small system variance is sought using language in appendix C of part 141 subpart O of this chapter;

(3) The address and telephone number at which interested persons may obtain further information concerning the contaminant and the small system variance;

(4) A brief summary, in easily understandable terms, of the terms and conditions of the small system variance;

(5) A description of the consumer petition process under §142.310 and information on contacting the EPA Regional Office;

(6) a brief statement announcing the public meeting required under §142.309(a), including a statement of the purpose of the meeting, information regarding the time and location for the meeting, and the address and telephone number at which interested persons may obtain further information concerning the meeting; and

(7) In communities with a large proportion of non-English-speaking residents, as determined by the primacy agency, information in the appropriate language regarding the content and importance of the notice.

(d) The notice in paragraph (a)(2) of this section must provide sufficient information to alert readers to the proposed variance and direct them where to receive additional information.

(e) At its option, the State or the Administrator may choose to issue separate notices or additional notices related to the proposed small system variance, provided that the requirements in paragraphs (a) through (d) of this section are satisfied.

(f) Prior to promulgating the final variance, the State or the Administrator must respond in writing to all significant public comments received relating to the small system variance. Response to public comment and any other documentation supporting the issuance of a variance must be made available to the public after final promulgation.

§142.309 What are the public meeting requirements associated with the proposal of a small system variance?

(a) A State or the Administrator must provide for at least one (1) public meeting on the small system variance no later than 15 days after the small system variance is proposed.

(b) At the time of the public meeting, the State or Administrator must prepare and make publicly available, in addition to the information listed in §142.308(c), either:

(1) The proposed small system variance, if the public meeting occurs after proposal of the small system variance; or

(2) A draft of the proposed small system variance, if the public meeting occurs prior to proposal of the proposed small system variance.

(c) Notice of the public meeting must be provided in the manner required under §142.308 at least 30 days in advance of the public meeting. This notice must be provided by the State, the Administrator, or the public water system as directed by the State or Administrator.

§142.310 How can a person served by the public water system obtain EPA review of a State proposed small system variance?

(a) Any person served by the public water system may petition the Administrator to object to the granting of a small system variance within 30 days after a State proposes to grant a small system variance for a public water system.

(b) The Administrator must respond to a petition filed by any person served by the public water system and determine whether to object to the small system variance under §142.311, no later than 60 days after the receipt of the petition.

EPA REVIEW AND APPROVAL OF SMALL SYSTEM VARIANCES

§ 142.311 What procedures allow the Administrator to object to a proposed small system variance or overturn a granted small system variance for a public water system serving 3,300 or fewer persons?

(a) At the time a State proposes to grant a small system variance under this subpart, the State must submit to the Administrator the proposed small system variance and all supporting information, including any written public comments received prior to proposal.

(b) The Administrator may review and object to any proposed small system variance within 90 days of receipt of the proposed small system variance. The Administrator must notify the State in writing of each basis for the objection and propose a modification to the small system variance to resolve the concerns of the Administrator. The State must make the recommended modification, respond in writing to each objection, or withdraw the proposal to grant the small system variance.

(c) If the State issues the small system variance without resolving the concerns of the Administrator, the Administrator may overturn the State decision to grant the variance if the Administrator determines that the State decision does not comply with the Act or this rule.

§ 142.312 What EPA action is necessary when a State proposes to grant a small system variance to a public water system serving a population of more than 3,300 and fewer than 10,000 persons?

(a) At the time a State proposes to grant a small system variance to a public water system serving a population of more than 3,300 and fewer than 10,000 persons, the State must submit the proposed small system variance and all supporting information, including public comments received prior to proposal, to the Administrator.

(b) The Administrator must approve or disapprove the small system variance within 90 days of receipt of the proposed small system variance and supporting information. The Administrator must approve the small system variance if it meets each requirement within the Act and this rule.

(c) If the Administrator disapproves the small system variance, the Administrator must notify the State in writing of the reasons for disapproval and the small system variance does not become effective. The State may resubmit the small system variance for review and approval with modifications to address the objections stated by the Administrator.

§ 142.313 How will the Administrator review a State's program under this subpart?

(a) The Administrator must periodically review each State program under this subpart to determine whether small system variances granted by the State comply with the requirements of the Act, this rule and the affordability criteria developed by the State.

(b) If the Administrator determines that small system variances granted by a State are not in compliance with the requirements of the Act, this rule or the affordability criteria developed by the State, the Administrator shall notify the State in writing of the deficiencies and make public the determinations.

(c) The Administrator's review will be based in part on quarterly reports prepared by the States pursuant to § 142.15(a)(1) relating to violations of increments of progress or other violated terms or conditions of small system variances.

PART 143—NATIONAL SECONDARY DRINKING WATER REGULATIONS

Sec.

AUTHORITY: 42 U.S.C. 300f *et seq.*

SOURCE: 44 FR 42198, July 19, 1979, unless otherwise noted.

§ 143.1 Purpose.

This part establishes National Secondary Drinking Water Regulations pursuant to section 1412 of the Safe

Drinking Water Act, as amended (42 U.S.C. 300g–1). These regulations control contaminants in drinking water that primarily affect the aesthetic qualities relating to the public acceptance of drinking water. At considerably higher concentrations of these contaminants, health implications may also exist as well as aesthetic degradation. The regulations are not Federally enforceable but are intended as guidelines for the States.

§ 143.2 Definitions.

(a) *Act* means the Safe Drinking Water Act as amended (42 U.S.C. 300f *et seq.).*

(b) *Contaminant* means any physical, chemical, biological, or radiological substance or matter in water.

(c) *Public water system* means a system for the provision to the public of piped water for human consumption, if such a system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and (2) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a ''community water system'' or a ''non-community water system.''

(d) *State* means the agency of the State or Tribal government which has jurisdiction over public water systems. During any period when a State does not have responsibility pursuant to section 1443 of the Act, the term ''State'' means the Regional Administrator, U.S. Environmental Protection Agency.

(e) *Supplier of water* means any person who owns or operates a public water system.

(f) *Secondary maximum contaminant levels* means SMCLs which apply to public water systems and which, in the judgement of the Administrator, are requisite to protect the public welfare. The SMCL means the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of public water system. Contamimants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

[44 FR 42198, July 19, 1979, as amended at 53 FR 37412, Sept. 26, 1988]

§ 143.3 Secondary maximum contaminant levels.

The secondary maximum contaminant levels for public water systems are as follows:

Contaminant	Level
Aluminum	0.05 to 0.2 mg/l.
Chloride	250 mg/l.
Color	15 color units.
Copper	1.0 mg/l.
Corrosivity	Non-corrosive.
Fluoride	2.0 mg/l.
Foaming agents	0.5 mg/l.
Iron	0.3 mg/l.
Manganese	0.05 mg/l.
Odor	3 threshold odor number.
pH	6.5–8.5.
Silver	0.1 mg/l.
Sulfate	250 mg/l.
Total dissolved solids (TDS)	500 mg/l.
Zinc	5 mg/l.

These levels represent reasonable goals for drinking water quality. The States may establish higher or lower levels which may be appropriate dependent upon local conditions such as unavailability of alternate source waters or other compelling factors, provided that public health and welfare are not adversely affected.

[44 FR 42198, July 19, 1979, as amended at 51 FR 11412, Apr. 2, 1986; 56 FR 3597, Jan. 30, 1991]

§ 143.4 Monitoring.

(a) It is recommended that the parameters in these regulations should be monitored at intervals no less frequent than the monitoring performed for inorganic chemical contaminants listed in the National Interim Primary Drinking Water Regulations as applicable to community water systems. More frequent monitoring would be appropriate for specific parameters such as pH, color, odor or others under certain circumstances as directed by the State.

(b) Measurement of pH, copper and fluoride to determine compliance under

§143.3 may be conducted with one of the methods in §141.23(k)(1). Analyses of aluminum, chloride, foaming agents, iron, manganese, odor, silver, sulfate, total dissolved solids (TDS) and zinc to determine compliance under §143.3 may be conducted with the methods in the following table or alternative methods listed in appendix A to subpart C of part 141. Criteria for analyzing aluminum, copper, iron, manganese, silver and zinc samples with digestion or directly without digestion, and other analytical test procedures are contained in *Technical Notes on Drinking Water Methods,* EPA–600/R–94–173, October 1994. This document is available from the National Service Center for Environmental Publications (NSCEP), P.O. Box 42419, Cincinnati, OH 45242–0419 or *http://www.epa.gov/nscep/.*

Contaminant	EPA	ASTM [3]	SM [4] 18th and 19th ed.	SM [4] 20th ed.	SM [7] Online	Other
1. Aluminum	200.7 [2]		3120 B	3120 B	3120 B–99.	
	200.8 [2]		3113 B		3113 B–99.	
	200.9 [2]		3111 D		3111 D–99.	
2. Chloride	300.0 [1], 300.1 [6]	D4327–97, 03	4110 B	4110 B	4110 B–00.	
		D512–89 (Reapproved 1999) B.	4500–Cl^- D 4500–Cl^- B	4500–Cl^- D 4500–Cl^- B	4500–Cl^- D–97. 4500–Cl^- B–97.	
3. Color			2120 B	2120 B	2120 B–01.	D6508, Rev. 2 [8]
4. Foaming Agents			5540 C	5540 C	5540 C–00.	
5. Iron	200.7 [2]		3120 B	3120 B	3120 B–99.	
	200.9 [2]		3111 B		3111 B–99.	
			3113 B		3113 B–99.	
6. Manganese	200.7 [2]		3120 B	3120 B	3120 B–99.	
	200.8 [2]		3111 B		3111 B–99.	
	200.9 [2]		3113 B		3113 B–99.	
7. Odor			2150 B	2150 B	2150 B–97.	
8. Silver	200.7 [2]		3120 B	3120 B	3120 B–99.	I–3720–85 [5]
	200.8 [2]		3111 B		3111 B–99.	
	200.9 [2]		3113 B		3113 B–99.	
9. Sulfate	300.0 [1], 300.1 [6]	D4327–97, 03	4110 B	4110 B	4110 B–00.	
	375.2 [1]		4500–SO_4^{2-} F	4500–SO_4^{2-} F.		
			4500–SO_4^{2-} C, D	4500–SO_4^{2-} C, D.		
		D516–90, 02	4500–SO_4^{2-} E	4500–SO_4^{2-} E.		D6508, Rev. 2 [8]
10. Total Dissolved Solids	200.7 [2]		2540 C	2540 C	2540 C–97.	
11. Zinc	200.7 [2]		3120 B	3120 B	3120 B–99.	
	200.8 [2]		3111 B		3111 B–99.	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800–426–4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW., Room 3334, Washington, DC (Telephone: 202–566–2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

[1] "Methods for the Determination of Inorganic Substances in Environmental Samples," EPA/600/R–93–100, August 1993. Available at NTIS, PB94–120821.

[2] "Methods for the Determination of Metals in Environmental Samples—Supplement I," EPA/600/R–94–111, May 1994. Available at NTIS, PB 95–125472.

[3] *Annual Book of ASTM Standards,* 1994, 1996, 1999, or 2004, Vols. 11.01 and 11.02, ASTM International; any year containing the cited version of the method may be used. Copies may be obtained from the ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

[4] *Standard Methods for the Examination of Water and Wastewater,* 18th edition (1992), 19th edition (1995), or 20th edition (1998). American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005. The cited methods published in any of these three editions may be used, except that the versions of 3111 B, 3111 D, and 3113 B in the 20th edition may not be used.

[5] Method I–3720–85, *Techniques of Water Resources Investigation of the U.S. Geological Survey,* Book 5, Chapter A–1, 3rd ed., 1989. Available from Information Services, U.S. Geological Survey, Federal Center, Box 25286, Denver, CO 80225–0425.

[6] "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water," Vol. 1, EPA 815R–00–014, August 2000. Available at NTIS, PB2000–106981.
[7] Standard Methods Online are available at *http://www.standardmethods.org*. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.
[8] Method D6508, Rev. 2, "Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte," available from Waters Corp. 34 Maple St., Milford, MA, 01757, Telephone: 508/482–2131, Fax: 508/482–3625.

[44 FR 42198, July 19, 1979, as amended at 53 FR 5147, Feb. 19, 1988; 56 FR 30281, July 1, 1991; 59 FR 62470, Dec. 5, 1994; 64 FR 67466, Dec. 1, 1999; 67 FR 65252, Oct. 23, 2002; 69 FR 18803, Apr. 9, 2004; 72 FR 11248, Mar. 12, 2007; 74 FR 30959, June 29, 2009]

LCR Data Entry and Schedule Change Log

PWS name: _____ PWS #: _____

Current schedule: __ **RT/**__ Initial monitoring begin date: __/__/____

Date of last sample: __/__/____ Current sample Collection date: __/__/____

Current monitoring period begin date and end date: __/__/____ **to** __/__/____

Population: _____ Number of current sample collected: _____

If any of the following apply, a schedule change is needed.

- Systems on three year monitoring who collected in the 1st or 2nd year of a three year schedule.
- Systems that have collected two consecutive six-months of monitoring < action level can reduce to yearly (reduce to triennial if the two six-months of monitoring had lead levels less than or equal to 0.005 mg/L and had copper levels less than 0.65 mg/L)
- Systems that have collected two six-month plus 2 yearly monitoring periods with no AL exceedances and no FTM can reduce to triennial.
- Systems that have had a change of population see column two below.
- Systems that change or add a new source, change or add treatment need to be evaluated to see if they need to return to every 6 month monitoring.

If a schedule change is needed, describe the reason: _____

_____

_____

Schedule ended (e.g., 20 RT/6mo starting 1/1/12): __ **RT/**__ **starting** __/__/____

Schedule begun (e.g., 10 RT/3 yr starting 1/1/13):* __ **RT/**__ **starting** __/__/____

*If going from 1 yr/3 yr to six month monitoring increase to standard monitoring in column three.

Table 1. Lead and Copper Tap and WQP Tap Monitoring

Size Category	System Size	Number of Pb/Cu Tap Sample Sites[3]		Number of WQP Tap Sample Sites[4]	
		6 m. schedule	1 or 3 y.	6 m. schedule	1or 3 y.
Large	> 100K	100	50	25	10
	50,001 - 100K	60	30	10	7
Medium	10,001 - 50K	60	30	10	7
	3,301 - 10K	40	20	3	3
Small	501 - 3,300	20	10	2	2
	101 - 500	10	5	1	1
	≤ 100	5	5	1	1

[3] With written State approval, PWSs can collect < 5 samples if all taps used for human consumption are sampled.
[4] Two WQP tap samples are collected at each sampling site.

Data entry completed by: _____ Date: _____

Group removed from: _____ Added to: _____

Please file

90th percentile calculation for lead and copper for 5 samples

Date_____

Name _____

PWS ID_____

Check one of the monitoring periods below:
1st six months of the year _____ 2nd six months of the year ____ Annual_____ Triennial _____

****

90th Percentile Lead:

Highest sample result 2nd highest sample result

_____mg/L + _____ mg/L = _____mg/L =
(Divide by 2)

_____mg/L

THIS IS YOUR 90th PERCENTILE LEAD LEVEL
Is this number greater than 0.015* mg/L (yes /no)_____
If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to three places after the decimal (0.000). Round up to 0.016 if result is 0.01550 or greater, round down to 0.015 if result is 0.01549 or less.

****

90th Percentile Copper:

Highest sample result 2nd highest sample result

_____mg/L + _____ mg/L = _____mg/L =
(Divide by 2)

_____mg/L

THIS IS YOUR 90th PERCENTILE COPPER LEVEL
Is this number greater than 1.3* mg/L (yes /no)_____
If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to one place after the decimal (0.0). Round up to 1.4 if 1.350 or greater, round down to 1.3 if 1.349 or less.

90th percentile calculation worksheet for lead and copper for 10 samples

(You can also use this worksheet if you collected between 6 and 15 samples)

Date_____

Name _____

PWS ID_____

Check one of the monitoring periods below:

1st six months of the year _____ 2nd six months of the year ____ Annual_____ Triennial _____

90th Percentile Lead:

Scratch area: Go through the lab results and scribble down the highest results for lead below.

_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L

From your scratch area write down the following lead levels:

Result of sample with the highest lead level _____mg/L

Result of sample with the second highest lead level _____mg/L

THIS IS YOUR 90th PERCENTILE LEAD LEVEL

Is this number greater than 0.015* mg/L (yes /no)_____

If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to three places after the decimal (0.000). Round up to 0.016 if result is 0.01550 or greater, round down to 0.015 if result is 0.01549 or less.

90th Percentile Copper:

Scratch area: Go through the lab results and scribble down the highest results for copper below.

_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L

From your scratch area write down the following copper levels:

Result of sample with the highest copper level _____mg/L

Result of sample with the second highest copper level _____mg/L

THIS IS YOUR 90th PERCENTILE COPPER LEVEL

Is this number greater than 1.3* mg/L (yes /no)_____

If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to one place after the decimal (0.0). Round up to 1.4 if 1.350 or greater, round down to 1.3 if 1.349 or less.

90th percentile calculation worksheet for lead and copper for 20 samples

(You can also use this worksheet if you collected between 16 and 25 samples)

Date_____

Name _____

PWS ID_____

Check one of the monitoring periods below:

1st six months of the year _____ 2nd six months of the year ____ Annual_____ Triennial _____

90th Percentile Lead:

Scratch area: Go through the lab results and scribble down the highest results for lead below.

_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L

From your scratch area write down the following lead levels:

Result of sample with the highest lead level _____mg/L

Result of sample with the second highest lead level _____mg/L

Result of sample with the third highest lead level _____mg/L

THIS IS YOUR 90th PERCENTILE LEAD LEVEL

Is this number greater than 0.015* mg/L (yes /no)_____

If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to three places after the decimal (0.000). Round up to 0.016 if result is 0.01550 or greater, round down to 0.015 if result is 0.01549 or less.

90th Percentile Copper:

Scratch area: Go through the lab results and scribble down the highest results for copper below.

_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L

From your scratch area write down the following copper levels:

Result of sample with the highest copper level _____mg/L

Result of sample with the second highest copper level_____mg/L

Result of sample with the third highest copper level _____mg/L

THIS IS YOUR 90th PERCENTILE COPPER LEVEL

Is this number greater than 1.3 mg/L* (yes /no)_____

If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to one place after the decimal (0.0). Round up to 1.4 if 1.350 or greater, round down to 1.3 if 1.349 or less.

90th percentile calculation worksheet for lead and copper for 30 samples

(You can also use this worksheet if you collected between 26 and 35 samples)

Date_____

Name _____

PWS ID_____

Check one of the monitoring periods below:

1st six months of the year _____ 2nd six months of the year ____ Annual_____ Triennial _____

90th Percentile Lead:

Scratch area: Go through the lab results and scribble down the highest results for lead below.

_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L

From your scratch area write down the following lead levels:

Result of sample with the highest lead level _____mg/L

Result of sample with the second highest lead level _____mg/L

Result of sample with the third highest lead level_____mg/L

Result of sample with the fourth highest lead level _____mg/L

THIS IS YOUR 90th PERCENTILE LEAD LEVEL

Is this number greater than 0.015* mg/L (yes /no)_____

If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to three places after the decimal (0.000). Round up to 0.016 if result is 0.01550 or greater, round down to 0.015 if result is 0.01549 or less.

90th Percentile Copper:

Scratch area: Go through the lab results and scribble down the highest results for copper below.

_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L

From your scratch area write down the following copper levels:

Result of sample with the highest copper level _____mg/L

Result of sample with the second highest copper level _____mg/L

Result of sample with the third highest copper level_____mg/L

Result of sample with the fourth highest copper level _____mg/L

THIS IS YOUR 90th PERCENTILE COPPER LEVEL

Is this number greater than 1.3* mg/L (yes /no)_____

If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to one place after the decimal (0.0). Round up to 1.4 if 1.350 or greater, round down to 1.3 if 1.349 or less.

90th percentile calculation worksheet for lead and copper for 40 samples

(You can also use this worksheet if you collected between 36 and 45 samples)

Date_____

Name _____

PWS ID_____

Check one of the monitoring periods below:

1st six months of the year _____ 2nd six months of the year ____ Annual_____ Triennial _____

90th Percentile Lead:

Scratch area: Go through the lab results and scribble down the highest results for lead below.

_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L

From your scratch area write down the following lead levels:

Result of sample with the highest lead level _____mg/L
Result of sample with the second highest lead level _____mg/L
Result of sample with the third highest lead level_____mg/L
Result of sample with the fourth highest lead level _____mg/L

Result of sample with the fifth highest lead level _____mg/L
THIS IS YOUR 90th PERCENTILE LEAD LEVEL
Is this number greater than 0.015* mg/L (yes /no)_____
If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to three places after the decimal (0.000). Round up to 0.016 if result is 0.01550 or greater, round down to 0.015 if result is 0.01549 or less.

90TH Percentile Copper:

Scratch area: Go through the lab results and scribble down the highest results for copper below.

_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L
_____mg/L

From your scratch area write down the following copper levels:

Result of sample with the highest copper level _____mg/L
Result of sample with the second highest copper level_____mg/L
Result of sample with the third highest copper level_____mg/L
Result of sample with the fourth highest copper level _____mg/L

Result of sample with the fifth highest copper level _____mg/L
THIS IS YOUR 90th PERCENTILE COPPER LEVEL
Is this number greater than 1.3* mg/L (yes /no)_____
If yes, the action level is exceeded and water quality parameter monitoring is required please contact EPA right away.

*Round to one place after the decimal (0.0). Round up to 1.4 if 1.350 or greater, round down to 1.3 if 1.349 or less.

General Public Education Notice and ListServ/Email Announcement Template

The following language meets the revised PE requirements under the 2007 short-term revisions and clarifications to the Lead and Copper Rule (LCR). **Your notice must include the topic areas in bold** below. *Anything in italics under each topic area is required language and cannot be changed* while anything in regular text must be covered, but you have the flexibility to use either the suggested language or your own words to cover these topics in non-italic areas.

Your notice must begin with the following opening statement (though you have the option to include a title of the pamphlet or brochure of your choosing):

PUBLIC EDUCATION NOTICE:

IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER

[Insert name of water system] *found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and children 6 years and younger. Please read this notice closely to see what you can do to reduce lead in your drinking water.*

Health Effects of Lead

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Sources of Lead

Lead is a common metal found in the environment. Drinking water is one possible source of lead exposure. The main sources of lead exposure are lead-based paint and lead-contaminated dust or soil, and some plumbing materials. In addition, lead can be found in certain types of pottery, pewter, brass fixtures, food, and cosmetics. Other sources include exposure in the work place and exposure from certain hobbies (lead can be carried on clothing or shoes). Lead is found in some toys, some playground equipment, and some children's metal jewelry.

Brass faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. The law currently allows end-use brass fixtures, such as faucets, with up to 8 percent lead to be labeled as "lead free."

[Insert utility specific information describing your community's source water – e.g. "The source of water from XX Reservoir does not contain lead" or "Community X does not have any lead in its source water or water mains in the street."] When water is in contact with pipes [or service lines] or

plumbing that contains lead for several hours, the lead may enter drinking water. Homes built before 1988 are more likely to have lead pipes or lead solder.

EPA estimates that 10 to 20 percent of a person's potential exposure to lead may come from drinking water. Infants who consume mostly formula mixed with lead-containing water can receive 40 to 60 percent of their exposure to lead from drinking water.

Don't forget about other sources of lead such as lead paint, lead dust, and lead in soil. Wash your children's hands and toys often as they can come into contact with dirt and dust containing lead.

Steps You Can Take To Reduce Your Exposure To Lead In Your Water

1. **Run your water to flush out lead.** Run water for 15-30 seconds to flush lead from interior plumbing [Run water for 5 minutes if you have a lead service line or any lead pipes in your home plumbing] or until it becomes cold or reaches a steady temperature before using it for drinking or cooking, if it hasn't been used for several hours.
2. **Use cold water for cooking and preparing baby formula.** Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.
3. **Do not boil water to remove lead.** Boiling water will not reduce lead.
4. **Look for alternative sources or treatment of water.** You may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010 or www.nsf.org for information on performance standards for water filters. Be sure to maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality.
5. **Test your water for lead.** Call us at [insert phone number for your water system] to find out how to get your water tested for lead. [Include information on your water system's testing program. For example, do you provide free testing? Are there labs in your area that are certified to do lead in water testing?]
6. **Get your child's blood tested.** Contact your local health department or healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.
7. **Identify and replace plumbing fixtures containing lead.** Brass faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. The law currently allows end-use brass fixtures, such as faucets, with up to 8% lead to be labeled as "lead free." Visit the Web site at www.nsf.org to learn more about lead-containing plumbing fixtures.

What Happened? What is Being Done?

[Insert information about how and when the exceedance was discovered in your community and provide information on the source(s) of lead in the drinking water, if known.]

[Insert information about what your system is doing to reduce lead levels in homes in your community.]

[Insert information about lead service lines in your community, how a consumer can find out of they have a lead service line, what your water system is doing to replace lead service lines, etc.]

[Insert information about the history of lead levels in tap water samples in your community. For example, have they declined substantially over time? Have they been low and risen recently? Is there a known reason for any lead level changes?]

For More Information

Call us at [Insert Number] (if applicable) *or visit our Web site at* [insert Web site Here]. *For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at* ***www.epa.gov/lead*** *or contact your health care provider.*

[We recommend you include the name of your system and the date that the information is being distributed, along with the state water system ID, somewhere on the notice.]

Source Water Treatment Recommendation

Date: _____

PWS ID No._____

PWS Name: _____

Contact Phone (___) _____

Contact Name: _____

Population served _____

List all entry points to the distribution system after treatment and the sample results for lead and copper taken at each entry point. Attach the results.

Entry Point Description	**Date Collected**	**Lead Value**	**Copper Value**
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

According to all my source water (entry point) sample results, the source water contribution of lead and copper into the distribution system is equal to or less than the detection level (0.005 mg/l for lead and 0.100 mg/l for copper). Therefore, our source water treatment recommendation is no treatment.

Signature of Official Custodian _____

Date: _____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

[seq Text_Box * Arabic \r0]

[SEQ CHAPTER \h \r 1]Ref: 8P-W-DW

[Name of Administrative Contact and Title]
[Name of PWS]
[Address]
[City, State Zip Code]

Re: Lead Action Level Exceedance
[PWS ID#]
[choose for public education handout: com (<3,300 OR >3,300) or NTNC]

Dear [Ms. Mr. Name]:

I am writing to inform you that **[name of system]** has exceeded the action level for lead which triggers a series of actions and steps leading to the installation corrosion control treatment. During the [**If the exceedance was from the 1st six months of monitoring then add, January 1 to June 30, [year]; if the exceedance was from the 2nd six months monitoring then add July 1 to December 31, [year]; if the exceedance was from annual or triennial monitoring then add June 1 to September 30, [year]**], monitoring period, your system's 90th percentile lead level was calculated at **[add 90th percentile value]** mg/L which exceeds the 0.015 mg/L lead action level. Your system's 90th percentile copper level was calculated at **[add 90th percentile copper value]** mg/L which is **[add above or below {note this same template can be used for a system with either a lead or lead and copper exceedance}]** below the 1.3 mg/L copper action level. The major source of lead in drinking water is corrosion of household plumbing, such as lead pipe, copper pipes with lead solder, faucets and valves. Exceedance of the lead action level is not a violation, but does trigger the following required actions and steps towards corrosion control:

1. **Collection of lead and copper tap samples.** Due to this action level exceedance, we have placed your system on an every six (6) month monitoring schedule for lead and copper. Based on your system's population of **[Add the population from SDWIS]**, you would need to submit [**add the number of samples per population from standard monitoring 141.86(c) in the following format: five (5)]** samples between **[If the exceedance was from the 1st six months of monitoring then add, July 1 and December 31, [same year] and then again between January 1 and June 30, [following year], if the exceedance was from the 2nd six months monitoring then add January 1 and June 30, [following year], and then again between July 1 and December 31, [following year]; if the exceedance was from annual or triennial monitoring then add January 1 and June 30, [following year], and then again between July 1 and December 31, [following year]]** and so on. If at any time during this six month monitoring scheme the results of two (2) consecutive six month monitoring periods are below the action levels, then steps towards installing corrosion control treatment can stop. Once an action level is exceeded, the lead and copper samples

are actually optional until corrosion control is installed. However, many systems opt to continue monitoring since efforts to eliminate sources of lead and copper may result in future samples being below the action level, and the installation of corrosion control can be avoided.

2. **Distribution of public education information for lead.** A water system that exceeds the lead action level is required to distribute public education materials within 60 days of the end of the monitoring period in which the exceedance occurred but no later than [**If the exceedance was from the 1st six months of monitoring then add, August 29, [same year]; if the exceedance was from the 2nd six months monitoring then add March 1, [following year}; if the exceedance was from annual or triennial monitoring then add November 29, [same year]**. A template for the required information needed for **public education** is enclosed. All written public education materials must be submitted to the U.S. Environmental Protection Agency prior to delivery. Appendix A summarizes the requirements for the delivery of public education materials.

3. **Collection of water quality parameters at the tap.** A water system that exceeds the lead action level is required to collect water quality parameter samples at the tap within 6 months of the beginning of the monitoring period in which the exceedance occurred but not later than [**If the exceedance was from the 1st six months of monitoring then add, June 30, [year]; if the exceedance was from the 2nd six months monitoring then add December 31, [year]; if the exceedance was from annual or triennial monitoring then add November 30, [year]**. According to the information in EPA's database, the system's population is **[add population]**. A water system serving a population between **[add population that brackets their population range (<100 to 500 = 1 sample, 501 to 3,300 = 2 samples, 3,301 to 10,000 = 3 samples, 10,001 to 100,000 = 10 samples]** people must collect tap water quality parameter samples from **[Add: number of samples] [location or locations]**. **[These/This] [Add: number of samples e.g., one (1)] tap [location/locations]** must be sampled twice but must not be taken on the same day. Samples should be representative of the water in the distribution system and can be the same locations as where your lead and copper samples or your total coliform samples are collected. Unlike lead and copper samples, water quality parameter samples need to be taken after flushing water from the sampling tap for at least five (5) minutes.

4. **Collection of water quality parameters at the source.** A water system that exceeds the lead action level is required to collect water quality parameter samples at the source within 6 months of the beginning of the monitoring period in which the action level was exceeded but no later than [**If the exceedance was from the 1st six months of monitoring then add, June 30, [year]; if the exceedance was from the 2nd six months monitoring then add December 31, [year]; if the exceedance was from annual or triennial monitoring then add November 30, [year]**. **Two (2)** sets of water quality parameter samples are required to be collected from each entry point to the distribution system but, must not be taken on the same day. Unlike lead and copper samples, water quality parameter samples need to be taken after flushing water from the sampling tap for at least five (5) minutes.

   The following **water quality parameters** are required to be tested at the tap and source locations:

   a. pH (must be sampled at the time sample collection)
   b. water temperature (must be sampled at the time sample collection)
   c. calcium
   d. alkalinity
   e. total dissolved solids (conductivity)

f. orthophosphate (only if phosphate-based corrosion inhibitor is used)
g. silica (only if silicate-based corrosion inhibitor is used)

5. **Reporting your optimal corrosion control treatment recommendation.** A water system that exceeds the lead action level is required to submit a corrosion control treatment recommendation to EPA within 6 months after the end of the monitoring period in which the exceedance occurred but no later than [**If the exceedance was from the 1st six months of monitoring then add, December 31, [same year]; if the exceedance was from the 2nd six months monitoring then add June 30, [following year]; if the exceedance was from annual or triennial monitoring then add February 28, [following year]**. You may recommend one of the following four corrosion control treatments: (1) alkalinity and pH adjustment, (2) calcium hardness adjustment, (3) phosphate-based corrosion inhibitor, or (4) silicate-based corrosion inhibitor. A template for reporting your corrosion control treatment recommendation is enclosed.

   Note: Replacing faucets and valves with lead free products at the locations with high lead is not a corrosion control treatment because the rule is designed to protect everyone served. If the faucets and valves are replaced with lead free products at the locations with high lead levels, we recommend that you collect a follow up lead and copper sample after installation, and then choose a different tier 1 sample location for future routine monitoring. A tier 1 site is any single family home with a lead service line or copper pipe installed between 1983 and 1988. If insufficient tier 1 sites are available, then tier 2 sites, which are buildings or multiple-family residences with a lead service line or copper pipe installed between 1983 and 1988, can be used. If tier 1 and 2 sites are unavailable, then tier 3, which consist of single family structures that contain copper pipe with lead solder installed before 1983 can be used. An information sheet on what logos to look for when purchasing lead free products is enclosed.

6. **Collection of source water lead and copper samples at the entry point to the distribution system.** A water system that exceeds the lead action level is required to collect source water lead and copper within six (6) months after the end of the monitoring period in which the exceedance occurred but no later than [**If the exceedance was from the 1st six months of monitoring then add, December 31, [same year]; if the exceedance was from the 2nd six months monitoring then add June 30, [following year]; if the exceedance was from annual or triennial monitoring then add February 28, [following year]**. **One (1)** lead and copper source sample is required at each entry point to the distribution system after treatment.

7. **Reporting your source water treatment recommendation.** A water system that exceeds the lead action level is required to submit a source water treatment recommendation to EPA within six (6) months after the end of the monitoring period in which the exceedance occurred but not later than [**If the exceedance was from the 1st six months of monitoring then add, December 31, [same year]; if the exceedance was from the 2nd six months monitoring then add June 30, [following year]; if the exceedance was from annual or triennial monitoring then add February 28, [following year]**. For results below the detection level, the source water treatment recommendation is "no treatment." A template for reporting your source water treatment recommendation is enclosed.

8. **Public notification requirements.** Public notification is only required if one (1) or more of the deadlines identified in 1 through 7 above are missed. If that occurs, the EPA will send you a violation letter that also describes the required public notice requirements.

If continued six-month monitoring does not result in lead or copper sample results below the action

levels, we will contact you within twelve (12) months of the end of the monitoring period in which the exceedance occurred or no later than [**If the exceedance was from the 1st six months of monitoring then add, June 30, [following year]; if the exceedance was from the 2nd six months monitoring then add December 31, [following year]; if the exceedance was from annual or triennial monitoring then add September 30, [following year],** to discuss whether corrosion control studies should be conducted.{Template choice: Choose first sentence if population is between > 3,301 and < 50,000 or choose second sentence if population is < 3,300 or less.} If corrosion control studies are not performed EPA will designate optimal corrosion control treatment within 18 months of the end of the monitoring period in which the exceedance occurred or by [**If the exceedance was from the 1st six months of monitoring then add, December 31, [following year]; if the exceedance was from the 2nd six months monitoring then add June 30, [second year]; if the exceedance was from annual or triennial monitoring then add February 28, [second year]**. If corrosion control studies are not performed EPA will designate optimal corrosion control treatment within 24 months of the end of the monitoring period in which the exceedance occurred or by [**If the exceedance was from the 1st six months of monitoring then add, June 30, [second year]; if the exceedance was from the 2nd six months monitoring then add December 31, [second year]; if the exceedance was from annual or triennial monitoring then add September 30, [second year]**.

To discuss these requirements in more detail and answer any questions you may have, please call Bob Clement toll-free at 1-(800) 227-8917 extension 6653, directly at (303)-312-6653, or by email at clement.robert@epa.gov.

Sincerely,

Sarah Bahrman, Unit Chief
Drinking Water Unit B

Enclosures

cc:

bcc:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

[seq Text_Box * Arabic \r0]

[SEQ CHAPTER \h \r 1]Ref: 8P-W-DW

[Name of Administrative Contact and Title]
[Name of PWS]
[Address]
[City, State Zip Code]

Re: Copper Action Level Exceedance
[PWS ID#]

Dear [Ms. Mr. Name]:

I am writing to inform you that **[name of system]** has exceeded the action level for copper which triggers a series of actions and steps leading to the installation corrosion control treatment. During the [**If the exceedance was from the 1st six months of monitoring then add, January 1 to June 30, [year]; if the exceedance was from the 2nd six months monitoring then add July 1 to December 31, [year]; if the exceedance was from annual or triennial monitoring then add June 1 to September 30, [year]**], monitoring period, your system's 90th percentile copper level was calculated at **[add 90th percentile value]** mg/L which exceeds the 1.3 mg/L copper action level. Your system's 90th percentile lead level was calculated at **[add 90th percentile copper value]** mg/L which is **[add above or below {note this same template can be used for a system with either a lead or lead and copper exceedance}]** below the 0.015 mg/L lead action level. The major source of copper in drinking water is the corrosion of copper household plumbing. Exceedance of the copper action level is not a violation, but does trigger the following required actions and steps towards corrosion control:

1. **Collection of lead and copper tap samples.** Due to this action level exceedance, we have placed your system on an every six (6) month monitoring schedule for lead and copper. Based on your system's population of **[Add the population from SDWIS]**, you would need to submit [**add the number of samples per population from standard monitoring 141.86(c) in the following format: five (5)]** samples between **[If the exceedance was from the 1st six months of monitoring then add, July 1 and December 31, [same year] and then again between January 1 and June 30, [following year], if the exceedance was from the 2nd six months monitoring then add January 1 and June 30, [following year], and then again between July 1 and December 31, [following year]; if the exceedance was from annual or triennial monitoring then add January 1 and June 30, [following year], and then again between July 1 and December 31, [following year]]** and so on. If at any time during this six month monitoring scheme the results of two (2) consecutive six month monitoring periods are below the action levels, then steps towards installing corrosion control treatment can stop. Once an action level is exceeded, the lead and copper samples are actually optional until corrosion control is installed. However, many systems opt to continue monitoring since efforts to eliminate sources of lead and copper may result in future samples being

below the action level, and the installation of corrosion control can be avoided.

2. **Collection of water quality parameters at the tap.** A water system that exceeds the action level is required to collect water quality parameter samples at the tap within 6 months of the beginning of the monitoring period in which the exceedance occurred but not later than [**If the exceedance was from the 1st six months of monitoring then add, June 30, [year]; if the exceedance was from the 2nd six months monitoring then add December 31, [year]; if the exceedance was from annual or triennial monitoring then add November 30, [year]**. According to the information in EPA's database, the system's population is **[add population]**. A water system serving a population between **[add population that brackets their population range (<100 to 500 = 1 sample, 501 to 3,300 = 2 samples, 3,301 to 10,000 = 3 samples, 10,001 to 100,000 = 10 samples]** people must collect tap water quality parameter samples from **[Add: number of samples] [location or locations]**. **[These/This] [Add: number of samples e.g., one (1)] tap [location/locations]** must be sampled twice but must not be taken on the same day. Samples should be representative of the water in the distribution system and can be the same locations as where your lead and copper samples or your total coliform samples are collected. Unlike lead and copper samples, water quality parameter samples need to be taken after flushing water from the sampling tap for at least five (5) minutes.

3. **Collection of water quality parameters at the source.** A water system that exceeds the action level is required to collect water quality parameter samples at the source within 6 months of the beginning of the monitoring period in which the action level was exceeded but no later than [**If the exceedance was from the 1st six months of monitoring then add, June 30, [year]; if the exceedance was from the 2nd six months monitoring then add December 31, [year]; if the exceedance was from annual or triennial monitoring then add November 30, [year]**. **Two (2)** sets of water quality parameter samples are required to be collected from each entry point to the distribution system but, must not be taken on the same day. Unlike lead and copper samples, water quality parameter samples need to be taken after flushing water from the sampling tap for at least five (5) minutes.

   The following **water quality parameters** are required to be tested at the tap and source locations:

   a. pH (must be sampled at the time sample collection)
   b. water temperature (must be sampled at the time sample collection)
   c. calcium
   d. alkalinity
   e. total dissolved solids (conductivity)
   f. orthophosphate (only if phosphate-based corrosion inhibitor is used)
   g. silica (only if silicate-based corrosion inhibitor is used)

4. **Reporting your optimal corrosion control treatment recommendation.** A water system that exceeds the action level is required to submit a corrosion control treatment recommendation to EPA within 6 months after the end of the monitoring period in which the exceedance occurred but no later than [**If the exceedance was from the 1st six months of monitoring then add, December 31, [same year]; if the exceedance was from the 2nd six months monitoring then add June 30, [following year]; if the exceedance was from annual or triennial monitoring then add February 28, [following year]**. You may recommend one of the following four corrosion control treatments: (1) alkalinity and pH adjustment, (2) calcium hardness adjustment, (3) phosphate-based corrosion inhibitor, or (4) silicate-based corrosion inhibitor. A template for reporting your corrosion control treatment recommendation is enclosed.

5. **Collection of source water lead and copper samples at the entry point to the distribution system.** A water system that exceeds the action level is required to collect source water lead and copper within six (6) months after the end of the monitoring period in which the exceedance occurred but no later than [**If the exceedance was from the 1st six months of monitoring then add, December 31, [same year]; if the exceedance was from the 2nd six months monitoring then add June 30, [following year]; if the exceedance was from annual or triennial monitoring then add February 28, [following year]**. **One (1)** lead and copper source sample is required at each entry point to the distribution system after treatment.

6. **Reporting your source water treatment recommendation.** A water system that exceeds the action level is required to submit a source water treatment recommendation to EPA within six (6) months after the end of the monitoring period in which the exceedance occurred but not later than [**If the exceedance was from the 1st six months of monitoring then add, December 31, [same year]; if the exceedance was from the 2nd six months monitoring then add June 30, [following year]; if the exceedance was from annual or triennial monitoring then add February 28, [following year]**. For results below the detection level, the source water treatment recommendation is "no treatment." A template for reporting your source water treatment recommendation is enclosed.

7. **Public notification requirements.** Public notification is only required if one (1) or more of the deadlines identified in 1 through 6 above are missed. If that occurs, the EPA will send you a violation letter that also describes the required public notice requirements.

If continued six-month monitoring does not result in lead or copper sample results below the action levels, we will contact you within twelve (12) months of the end of the monitoring period in which the exceedance occurred or no later than [**If the exceedance was from the 1st six months of monitoring then add, June 30, [following year]; if the exceedance was from the 2nd six months monitoring then add December 31, [following year]; if the exceedance was from annual or triennial monitoring then add September 30, [following year],** to discuss whether corrosion control studies should be conducted.{Template choice: Choose first sentence if population is between > 3,301 and < 50,000 or choose second sentence if population is < 3,300 or less.} If corrosion control studies are not performed EPA will designate optimal corrosion control treatment within 18 months of the end of the monitoring period in which the exceedance occurred or by [**If the exceedance was from the 1st six months of monitoring then add, December 31, [following year]; if the exceedance was from the 2nd six months monitoring then add June 30, [second year]; if the exceedance was from annual or triennial monitoring then add February 28, [second year]**. If corrosion control studies are not performed EPA will designate optimal corrosion control treatment within 24 months of the end of the monitoring period in which the exceedance occurred or by [**If the exceedance was from the 1st six months of monitoring then add, June 30, [second year]; if the exceedance was from the 2nd six months monitoring then add December 31, [second year]; if the exceedance was from annual or triennial monitoring then add September 30, [second year]**.

To discuss these requirements in more detail and answer any questions you may have, please call Bob Clement toll-free at 1-(800) 227-8917 extension 6653, directly at (303)-312-6653, or by email at clement.robert@epa.gov.

Sincerely,

Sarah Bahrman, Unit Chief
Drinking Water Unit B

Enclosures

cc:

bcc:

Notice of Lead Tap Water Results

Sample Location: _____ Date Collected: _____

Dear _____,

We would like to thank you for your participation in the lead tap monitoring program. Below is the lead result for the sample location listed above. Additional general information concerning lead in drinking water follows. For more information on reducing lead exposure around your home and the health effects of lead, visit EPA's Web site at **www.epa.gov/lead**, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

If you need more information concerning this result, please call the _____ community water supply at _____ and ask for _____.

ONLY the statement that is checked below is applicable to your sample location.

_____ Lead was NOT DETECTED at this sample location.

_____ Lead was detected at _____ parts per billion (ppb). This result is BELOW the lead action level of 15 parts per billion.

_____ Lead was detected at _____ parts per billion (ppb). This result is ABOVE the lead action level of 15 parts per billion.

The 90 percentile value for our community water supply was _____ parts per billion (ppb).

What Does This Mean?
Under the authority of the Safe Drinking Water Act, EPA set the action level for lead in drinking water at 15 ppb. This means utilities must ensure that water from the customer's tap does not exceed this level in at least 90 percent of the homes sampled (90th percentile value). The action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. If water from the tap does exceed this limit, then the utility must take certain steps to correct the problem. Because lead may pose serious health risks, the EPA set a Maximum Contaminant Level Goal (MCLG) of zero for lead. The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

If detected, your lead level may be due to conditions unique to your home, such as the presence of lead solder or brass faucets, fittings and valves that may contain lead. Our system works to keep the corrosivity of our water as low as possible (corrosive water can cause lead to leach from plumbing materials that contain lead) and there are actions you can take to reduce exposure. We strongly urge you to take the steps below to reduce your exposure to lead in drinking water.

Should the current (or if in the future) lead 90 percentile for the community water supply exceeds the lead action level, you can rest assure that we are taking a number of steps to correct the problem. Such steps will or would include; monitor our source water, initiate controls to reduce the corrosivity of our

water (corrosive water can cause lead to leach from plumbing materials that contain lead) and initiate lead service line replacement if needed.

What Are The Health Effects of Lead?
Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

What Are The Sources of Lead?
The primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated residential soil. Exposure to lead is a significant health concern, especially for young children and infants whose growing bodies tend to absorb more lead than the average adult. Lead is rarely found in source water, but enters tap water through corrosion of plumbing materials. Homes built before 1986 are more likely to have lead pipes, fixtures and solder.

What Can I Do To Reduce Exposure to Lead in Drinking Water?
If you are concerned about the lead levels at your location, there are several things you can do:

- ***Run your water to flush out lead.*** If water hasn't been used for several hours, run water for 15-30 seconds or until it becomes cold or reaches a steady temperature before using it for drinking or cooking. This will help flush lead-containing water from the pipes.

- ***Use cold water for cooking and preparing baby formula.*** Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.

- ***Do not boil water to remove lead.*** Boiling water will not reduce lead.

- ***Look for alternative sources or treatment of water.***

- ***Test your water for lead.*** Call us at the number above to find out how to get your water tested for lead.

- ***Identify if your plumbing fixtures contain lead.*** New brass faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. The law currently allows end-use brass fixtures, such as faucets, with up to 8% lead to be labeled as "lead free." Consumers should be aware of this when choosing fixtures and take appropriate precautions.

Lead Consumer Informational Notice Certification Form

Please complete this form and return to: EPA Region 8, Lead/Copper Coordinator, 1595 Wynkoop Street, Denver, CO 80202-1129 or fax to: Attention Lead/Copper Coordinator, 1-877-876-9101

PWS Name: _____ PWS No. _____
Contact Person: _____ Phone :(____) _____
Today's Date: _____

Monitoring period to which the notice applies (e.g., June – Sept. 2009): _____

The last result for the period was received from the laboratory on: _____

All results were provided to consumers by (date): _____

The water system also certifies that the template contained the following information and was delivered within 30 days of receiving the test results from the laboratory to such persons:

Individual tap results from lead tap water monitoring
An explanation of the health effects of lead
Steps that consumers can take to reduce exposure to lead in drinking water
Contact information for your water utility
The maximum contaminant level goals and action levels for lead, and the definitions of these two terms

DELIVERY METHOD
The result/information notice was distributed by the following method, check all that apply:

By Direct Mail_____
By Hand Delivery_____
By Electronic mail_____
Other (e.g. posting)_____

Signature of Owner, Administrative Contact, or Official Custodian

I, _____, hereby certify that the lead consumer notice and result has been provided to each person it serves at the specific sampling site from which the sample was tested.

Signature_____ Date _____

Title _____

Title 40: Protection of Environment

[HYPERLINK "http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?type=simple;c=ecfr;cc=ecfr;sid=4b6a726014643972bd14501dc2b5ebce;idno=40;region=DIV1;q1=Lead%20and%20Copper;rgn=div5;view=text;node=40%3A23.0.1.1.3"]

[HYPERLINK "http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?type=simple;c=ecfr;cc=ecfr;sid=4b6a726014643972bd14501dc2b5ebce;idno=40;region=DIV1;q1=Lead%20and%20Copper;rgn=div6;view=text;node=40%3A23.0.1.1.3.8"] | [HYPERLINK "http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?type=simple;c=ecfr;cc=ecfr;sid=4b6a726014643972bd14501dc2b5ebce;idno=40;region=DIV1;q1=Lead%20and%20Copper;rgn=div6;view=text;node=40%3A23.0.1.1.3.10"]

Subpart I—Control of Lead and Copper

Source: 56 FR 26548, June 7, 1991, unless otherwise noted.

§ 141.80 General requirements.

141.80(a) *Applicability and effective dates.*

141.80(a)(1) The requirements of this subpart I constitute the national primary drinking water regulations for lead and copper. Unless otherwise indicated, each of the provisions of this subpart applies to community water systems and non-transient, non-community water systems (hereinafter referred to as "water systems" or "systems").

(2) [Reserved]

141.80(b) *Scope.* These regulations establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

141.80(c) *Lead and copper action levels.*

141.80(c)(1) The lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with §141.86 is greater than 0.015 mg/L (*i.e.* , if the "90th percentile" lead level is greater than 0.015 mg/L).

141.80(c)(2) The copper action level is exceeded if the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with §141.86 is greater than 1.3 mg/L (*i.e.* , if the "90th percentile" copper level is greater than 1.3 mg/L).

141.80(c)(3) The 90th percentile lead and copper levels shall be computed as follows:

141.80(c)(3)(i) The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

141.80(c)(3)(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.

141.80(c)(3)(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(3)(ii) is the 90th percentile contaminant level.

141.80(c)(3)(iv) For water systems serving fewer than 100 people that collect 5 samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

141.80(c)(3)(v) For a public water system that has been allowed by the State to collect fewer than five samples in accordance with §141.86(c), the sample result with the highest concentration is considered the 90th percentile value.

141.80(d) *Corrosion control treatment requirements.*

141.80(d)(1) All water systems shall install and operate optimal corrosion control treatment as defined in §141.2.

141.80(d)(2) Any water system that complies with the applicable corrosion control treatment requirements specified by the State under §§141.81 and 141.82 shall be deemed in compliance with the treatment requirement contained in paragraph (d)(1) of this section.

141.80(e) *Source water treatment requirements.* Any system exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by the State under §141.83.

141.80(f) *Lead service line replacement requirements.* Any system exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements shall complete the lead service line replacement requirements contained in §141.84.

141.80(g) *Public education requirements.* Pursuant to §141.85, all water systems must provide a consumer notice of lead tap water monitoring results to persons served at the sites (taps) that are tested. Any system exceeding the lead action level shall implement the public education requirements.

141.80(h) *Monitoring and analytical requirements.* Tap water monitoring for **lead and copper**, monitoring for water quality parameters, source water monitoring for **lead and copper**, and analyses of the monitoring results under this subpart shall be completed in compliance with §§141.86, 141.87, 141.88, and 141.89.

141.80(i) *Reporting requirements.* Systems shall report to the State any information required by the treatment provisions of this subpart and §141.90.

141.80(j) *Recordkeeping requirements.* Systems shall maintain records in accordance with §141.91.

141.80(k) *Violation of national primary drinking water regulations.* Failure to comply with the applicable requirements of §§141.80–141.91, including requirements established by the State pursuant to these provisions, shall constitute a violation of the national primary drinking water regulations for lead and/or copper.

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 72 FR 57814, Oct. 10, 2007]

§ 141.81 Applicability of corrosion control treatment steps to small, medium-size and large water systems.

141.81(a) Systems shall complete the applicable corrosion control treatment requirements described in §141.82 by the deadlines established in this section.

141.81(a)(1) A large system (serving >50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (d) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(2) or (b)(3) of this section.

141.81(a)(2) A small system (serving ≤3300 persons) and a medium-size system (serving >3,300 and ≤50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (e) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(1), (b)(2), or (b)(3) of this section.

141.81(b) A system is deemed to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in this section if the system satisfies one of the criteria specified in paragraphs (b)(1) through (b)(3) of this section. Any such system deemed to have optimized corrosion control under this paragraph, and which has

treatment in place, shall continue to operate and maintain optimal corrosion control treatment and meet any requirements that the State determines appropriate to ensure optimal corrosion control treatment is maintained.

141.81(b)(1) A small or medium-size water system is deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six-month monitoring periods conducted in accordance with §141.86.

141.81(b)(2) Any water system may be deemed by the State to have optimized corrosion control treatment if the system demonstrates to the satisfaction of the State that it has conducted activities equivalent to the corrosion control steps applicable to such system under this section. If the State makes this determination, it shall provide the system with written notice explaining the basis for its decision and shall specify the water quality control parameters representing optimal corrosion control in accordance with §141.82(f). Water systems deemed to have optimized corrosion control under this paragraph shall operate in compliance with the State-designated optimal water quality control parameters in accordance with §141.82(g) and continue to conduct lead and copper tap and water quality parameter sampling in accordance with §141.86(d)(3) and §141.87(d), respectively. A system shall provide the State with the following information in order to support a determination under this paragraph:

141.81(b)(2)(i) The results of all test samples collected for each of the water quality parameters in §141.82(c)(3).

141.81(b)(2)(ii) A report explaining the test methods used by the water system to evaluate the corrosion control treatments listed in §141.82(c)(1), the results of all tests conducted, and the basis for the system's selection of optimal corrosion control treatment;

141.81(b)(2)(iii) A report explaining how corrosion control has been installed and how it is being maintained to insure minimal lead and copper concentrations at consumers' taps; and

141.81(b)(2)(iv) The results of tap water samples collected in accordance with §141.86 at least once every six months for one year after corrosion control has been installed.

141.81(b)(3) Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with §141.86 and source water monitoring conducted in accordance with §141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in §141.89(a)(1)(ii).

141.81(b)(3)(i) Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

141.81(b)(3)(ii) Any water system deemed to have optimized corrosion control in accordance with this paragraph shall continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in §141.86(c) and collecting the samples at times and locations specified in §141.86(d)(4)(iv). Any such system that has not conducted a round of monitoring pursuant to §141.86(d) since September 30, 1997, shall complete a round of monitoring pursuant to this paragraph no later than September 30, 2000.

141.81(b) (3)(iii) Any water system deemed to have optimized corrosion control pursuant to this paragraph shall notify the State in writing pursuant to §141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require any such system to conduct additional monitoring or to take other action the State deems appropriate to ensure that such systems maintain minimal levels of corrosion in the distribution system.

141.81(b)(3)(iv) As of July 12, 2001, a system is not deemed to have optimized corrosion control under this paragraph, and shall implement corrosion control treatment pursuant to paragraph (b)(3)(v) of this section unless it meets the copper action level.

141.81(b)(3)(v) Any system triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this paragraph shall implement corrosion control treatment in accordance with the deadlines in paragraph (e) of this section. Any such large system shall adhere to the schedule specified in that paragraph for medium-size systems, with the time periods for completing each step being triggered by the date the system is no longer deemed to have optimized corrosion control under this paragraph.

141.81(c) Any small or medium-size water system that is required to complete the corrosion control steps due to its exceedance of the lead or copper action level may cease completing the treatment steps whenever the system meets both action levels during each of two consecutive monitoring periods conducted pursuant to §141.86 and submits the results to the State. If any such water system thereafter exceeds the lead or copper action level during any monitoring period, the system (or the State, as the case may be) shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety. The State may require a system to repeat treatment steps previously completed by the system where the State determines that this is necessary to implement properly the treatment requirements of this section. The State shall notify the system in writing of such a determination and explain the basis for its decision. The requirement for any small- or medium-size system to implement corrosion control treatment steps in accordance with paragraph (e) of this section (including systems deemed to have optimized corrosion control under paragraph (b)(1) of this section) is triggered whenever any small- or medium-size system exceeds the lead or copper action level.

141.81(d) *Treatment steps and deadlines for large systems.* Except as provided in paragraph (b) (2) and (3) of this section, large systems shall complete the following corrosion control treatment steps (described in the referenced portions of §§141.82, 141.86, and 141.87) by the indicated dates.

141.81(d)(1) *Step 1:* The system shall conduct initial monitoring (§141.86(d)(1) and §141.87(b)) during two consecutive six-month monitoring periods by January 1, 1993.

141.81(d)(2) *Step 2:* The system shall complete corrosion control studies (§141.82(c)) by July 1, 1994.

141.81(d)(3) *Step 3:* The State shall designate optimal corrosion control treatment (§141.82(d)) by January 1, 1995.

141.81(d)(4) *Step 4:* The system shall install optimal corrosion control treatment (§141.82(e)) by January 1, 1997.

141.81(d)(5) *Step 5:* The system shall complete follow-up sampling (§141.86(d)(2) and §141.87(c)) by January 1, 1998.

141.81(d)(6) *Step 6:* The State shall review installation of treatment and designate optimal water quality control parameters (§141.82(f)) by July 1, 1998.

141.81(d)(7) *Step 7:* The system shall operate in compliance with the State-specified optimal water quality control parameters (§141.82(g)) and continue to conduct tap sampling (§141.86(d)(3) and §141.87(d)).

141.81(e) *Treatment Steps and deadlines for small and medium-size systems.* Except as provided in paragraph (b) of this section, small and medium-size systems shall complete the following corrosion control treatment steps (described in the referenced portions of §§141.82, 141.86 and 141.87) by the indicated time periods.

141.81(e)(1) *Step 1:* The system shall conduct initial tap sampling (§141.86(d)(1) and §141.87(b)) until the system either exceeds the lead or copper action level or becomes eligible for reduced monitoring under §141.86(d)(4). A system exceeding the lead or copper action level shall recommend optimal corrosion control treatment (§141.82(a)) within six months after the end of the monitoring period during which it exceeds one of the action levels.

141.81(e)(2) *Step 2:* Within 12 months after the end of the monitoring period during which a system exceeds the lead or copper action level, the State may require the system to perform corrosion control studies (§141.82(b)). If the State does not require the system to perform such studies, the State shall specify optimal corrosion control treatment (§141.82(d)) within the following timeframes:

141.81(e)(2)(i) For medium-size systems, within 18 months after the end of the monitoring period during which such system exceeds the lead or copper action level.

141.81(e)(2)(ii) For small systems, within 24 months after the end of the monitoring period during which such system exceeds the lead or copper action level.

141.81(e)(3) *Step 3:* If the State requires a system to perform corrosion control studies under step 2, the system shall complete the studies (§141.82(c)) within 18 months after the State requires that such studies be conducted.

141.81(e)(4) *Step 4:* If the system has performed corrosion control studies under step 2, the State shall designate optimal corrosion control treatment (§141.82(d)) within 6 months after completion of step 3.

141.81(e)(5) *Step 5:* The system shall install optimal corrosion control treatment (§141.82(e)) within 24 months after the State designates such treatment.

141.81(e)(6) *Step 6:* The system shall complete follow-up sampling (§141.86(d)(2) and §141.87(c)) within 36 months after the State designates optimal corrosion control treatment.

141.81(e)(7) *Step 7:* The State shall review the system's installation of treatment and designate optimal water quality control parameters (§141.82(f)) within 6 months after completion of step 6.

141.81(e)(8) *Step 8:* The system shall operate in compliance with the State-designated optimal water quality control parameters (§141.82(g)) and continue to conduct tap sampling (§141.86(d)(3) and §141.87(d)).

[56 FR 26548, June 7, 1991, as amended at 59 FR 33862, June 30, 1994; 65 FR 2004, Jan. 12, 2000; 72 FR 57814, Oct. 10, 2007]

§ 141.82 Description of corrosion control treatment requirements.

Each system shall complete the corrosion control treatment requirements described below which are applicable to such system under §141.81.

141.82(a) *System recommendation regarding corrosion control treatment.* Based upon the results of lead and copper tap monitoring and water quality parameter monitoring, small and medium-size water systems exceeding the lead or copper action level shall recommend installation of one or more of the corrosion control treatments listed in paragraph (c)(1) of this section which the system believes constitutes optimal corrosion control for that system. The State may require the system to conduct additional water quality parameter monitoring in accordance with §141.87(b) to assist the State in reviewing the system's recommendation.

141.82(b) *State decision to require studies of corrosion control treatment (applicable to small and medium-size systems).* The State may require any small or medium-size system that exceeds the lead or copper action level to perform corrosion control studies under paragraph (c) of this section to identify optimal corrosion control treatment for the system.

141.82(c) *Performance of corrosion control studies.*

141.82(c)(1) Any public water system performing corrosion control studies shall evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that system:

141.82(c)(1)(i) Alkalinity and pH adjustment;

141.82(c)(1)(ii) Calcium hardness adjustment; and

141.82(c)(1)(iii) The addition of a phosphate or silicate based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

141.82(c)(2) The water system shall evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration.

141.82(c)(3) The water system shall measure the following water quality parameters in any tests conducted under this paragraph before and after evaluating the corrosion control treatments listed above:

141.82(c)(3)(i) Lead;

141.82(c)(3)(ii) Copper;

141.82(c)(3)(iii) pH;

141.82(c)(3)(iv) Alkalinity;

141.82(c)(3)(v) Calcium;

141.82(c)(3)(vi) Conductivity;

141.82(c)(3)(vii) Orthophosphate (when an inhibitor containing a phosphate compound is used);

141.82(c)(3)(viii) Silicate (when an inhibitor containing a silicate compound is used);

141.82(c)(3)(ix) Water temperature.

141.82(c)(4) The water system shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

141.82(c)(4)(i) Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and/or

141.82(c)(4)(ii) Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

141.82(c)(5) The water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

141.82(c)(6) On the basis of an analysis of the data generated during each evaluation, the water system shall recommend to the State in writing the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The water system shall provide a rationale for its recommendation along with all supporting documentation specified in paragraphs (c) (1) through (5) of this section.

141.82(d) *State designation of optimal corrosion control treatment.*

141.82(d)(1) Based upon consideration of available information including, where applicable, studies performed under paragraph (c) of this section and a system's recommended treatment alternative, the State shall either approve the corrosion control treatment option recommended by the system, or designate alternative corrosion control treatment(s) from among those listed in paragraph (c)(1) of this section. When designating optimal treatment the State shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

141.82(d)(2) The State shall notify the system of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the State requests additional information to aid its review, the water system shall provide the information.

141.82(e) *Installation of optimal corrosion control.* Each system shall properly install and operate throughout its distribution

141.82(f) *State review of treatment and specification of optimal water quality control parameters.* The State shall evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the water system and determine whether the system has properly installed and operated the optimal corrosion control treatment designated by the State in paragraph (d) of this section. Upon reviewing the results of tap water and water quality parameter monitoring by the system, both before and after the system installs optimal corrosion control treatment, the State shall designate:

141.82(f)(1) A minimum value or a range of values for pH measured at each entry point to the distribution system;

141.82(f)(2) A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0, unless the State determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control;

141.82(f)(3) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the State determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

141.82(f)(4) If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;

141.82(f)(5) If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

The values for the applicable water quality control parameters listed above shall be those that the State determines to reflect optimal corrosion control treatment for the system. The State may designate values for additional water quality control parameters determined by the State to reflect optimal corrosion control for the system. The State shall notify the system in writing of these determinations and explain the basis for its decisions.

141.82(g) *Continued operation and monitoring.* All systems optimizing corrosion control shall continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameters at or above minimum values or within ranges designated by the State under paragraph (f) of this section, in accordance with this paragraph for all samples collected under §141.87(d) through (f). Compliance with the requirements of this paragraph shall be determined every six months, as specified under §141.87(d). A water system is out of compliance with the requirements of this paragraph for a six-month period if it has excursions for any State-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the State. Daily values are calculated as follows. States have discretion to delete results of obvious sampling errors from this calculation.

141.82(g)(1) On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both. If EPA has approved an alternative formula under §142.16 of this chapter in the State's application for a program revision submitted pursuant to §142.12 of this chapter, the State's formula shall be used to aggregate multiple measurements taken at a sampling point for the water quality parameter in lieu of the formula in this paragraph.

141.82(g)(2) On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.

141.82(g)(3) On days when no measurement is collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

141.82(h) *Modification of State treatment decisions.* Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the optimal corrosion control treatment under paragraph (d) of this section or optimal water quality control parameters under paragraph (f) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to optimize corrosion control treatment. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

141.82(i) *Treatment decisions by EPA in lieu of the State.* Pursuant to the procedures in §142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (d), (f), or (h) of this section and issue federal treatment determinations consistent with the requirements of those paragraphs where the Regional Administrator finds that:

141.82(i)(1) A State has failed to issue a treatment determination by the applicable deadlines contained in §141.81,

141.82(i)(2) A State has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

141.82(i) 3) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

[56 FR 26548, June 7, 1991, as amended at 65 FR 2004, Jan. 12, 2000]

§ 141.83 Source water treatment requirements.

Systems shall complete the applicable source water monitoring and treatment requirements (described in the referenced portions of paragraph (b) of this section, and in §§141.86, and 141.88) by the following deadlines.

141.83(a) *Deadlines for completing source water treatment steps—*

141.83(a)(1) *Step 1:* A system exceeding the lead or copper action level shall complete **lead and copper** source water monitoring (§141.88(b)) and make a treatment recommendation to the State (§141.83(b)(1)) no later than 180 days after the end of the monitoring period during which the lead or copper action level was exceeded.

141.83(a)(2) *Step 2:* The State shall make a determination regarding source water treatment (§141.83(b)(2)) within 6 months after submission of monitoring results under step 1.

141.83(a) (3) *Step 3:* If the State requires installation of source water treatment, the system shall install the treatment (§141.83(b)(3)) within 24 months after completion of step 2.

141.83(a) (4) *Step 4:* The system shall complete follow-up tap water monitoring (§141.86(d)(2) and source water monitoring (§141.88(c)) within 36 months after completion of step 2.

141.83(a) (5) *Step 5:* The State shall review the system's installation and operation of source water treatment and specify maximum permissible source water levels (§141.83(b)(4)) within 6 months after completion of step 4.

141.83(a) (6) *Step 6:* The system shall operate in compliance with the State-specified maximum permissible **lead and copper** source water levels (§141.83(b)(4)) and continue source water monitoring (§141.88(d)).

141.83(b) *Description of source water treatment requirements —*

141.83(b) (1) *System treatment recommendation.* Any system which exceeds the lead or copper action level shall recommend in writing to the State the installation and operation of one of the source water treatments listed in paragraph (b)(2) of this section. A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize **lead and copper** levels at users' taps.

141.83(b) (2) *State determination regarding source water treatment.* The State shall complete an evaluation of the results of all source water samples submitted by the water system to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the State determines that treatment is needed, the State shall either require installation and operation of the source water treatment recommended by the system (if any) or require the installation and operation of another source water treatment from among the following: Ion exchange, reverse osmosis, lime softening or coagulation/filtration. If the State requests additional information to aid in its review, the water system shall provide the information by the date specified by the State in its request. The State shall notify the system in writing of its determination and set forth the basis for its decision.

141.83(b) (3) *Installation of source water treatment.* Each system shall properly install and operate the source water treatment designated by the State under paragraph (b)(2) of this section.

141.83(b) (4) *State review of source water treatment and specification of maximum permissible source water levels.* The State shall review the source water samples taken by the water system both before and after the system installs source water treatment, and determine whether the system has properly installed and operated the source water treatment designated by the State. Based upon its review, the State shall designate the maximum permissible **lead and copper** concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment properly operated and maintained. The State shall notify the system in writing and explain the basis for its decision.

141.83(b) (5) *Continued operation and maintenance.* Each water system shall maintain **lead and copper** levels below the maximum permissible concentrations designated by the State at each sampling point monitored in accordance with §141.88. The system is out of compliance with this paragraph if the level of lead or copper at any sampling point is greater than the maximum permissible concentration designated by the State.

141.83(b) (6) *Modification of State treatment decisions.* Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the source water treatment under paragraph (b)(2) of this section, or maximum permissible **lead and copper** concentrations for finished water entering the distribution system under paragraph (b)(4) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to minimize **lead and copper** concentrations in

source water. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

141.83(b) (7) *Treatment decisions by EPA in lieu of the State.* Pursuant to the procedures in §142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (b) (2), (4), or (6) of this section and issue Federal treatment determinations consistent with the requirements of those paragraphs where the Administrator finds that:

141.83(b) (7) (i) A State has failed to issue a treatment determination by the applicable deadlines contained in §141.83(a),

141.83(b) (7) (ii) A state has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

141.83(b) (7) (iii) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

[56 FR 26548, June 7, 1991, as amended at 72 FR 57815, Oct. 10, 2007]

§ 141.84 Lead service line replacement requirements.

141.84(a) Systems that fail to meet the lead action level in tap samples taken pursuant to §141.86(d)(2), after installing corrosion control and/or source water treatment (whichever sampling occurs later), shall replace lead service lines in accordance with the requirements of this section. If a system is in violation of §141.81 or §141.83 for failure to install source water or corrosion control treatment, the State may require the system to commence lead service line replacement under this section after the date by which the system was required to conduct monitoring under §141.86(d)(2) has passed.

141.84(b)(1) A water system shall replace annually at least 7 percent of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The system shall identify the initial number of lead service lines in its distribution system, including an identification of the portion(s) owned by the system, based on a materials evaluation, including the evaluation required under §141.86(a) and relevant legal authorities (e.g., contracts, local ordinances) regarding the portion owned by the system. The first year of lead service line replacement shall begin on the first day following the end of the monitoring period in which the action level was exceeded under paragraph (a) of this section. If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs. If the State has established an alternate monitoring period, then the end of the monitoring period will be the last day of that period.

141.84(b) (2) Any water system resuming a lead service line replacement program after the cessation of its lead service line replacement program as allowed by paragraph (f) of this section shall update its inventory of lead service lines to include those sites that were previously determined not to require replacement through the sampling provision under paragraph (c) of this section. The system will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that must be replaced per year (7 percent lead service line replacement is based on a 15-year replacement program, so, for example, systems resuming lead service line replacement after previously conducting two years of replacement would divide the updated inventory by 13). For those systems that have completed a 15-year lead service line replacement program, the State will determine a schedule for replacing or retesting lines that were previously tested out under the replacement program when the system re-exceeds the action level.

141.84(c) A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pursuant to §141.86(b)(3), is less than or equal to 0.015 mg/L.

141.84(d) A water system shall replace that portion of the lead service line that it owns. In cases where the system does not own the entire lead service line, the system shall notify the owner of the line, or the owner's authorized agent, that the system will replace the portion of the service line that it owns and shall offer to replace the owner's portion of the line. A system is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by State, local or common law. A water system that does not replace the entire length of the service line also shall complete the following tasks.

141.84(d) (1) At least 45 days prior to commencing with the partial replacement of a lead service line, the water system shall provide notice to the resident(s) of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. The State may allow the water system to provide notice under the previous sentence less than 45 days prior to commencing

partial lead service line replacement where such replacement is in conjunction with emergency repairs. In addition, the water system shall inform the resident(s) served by the line that the system will, at the system's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed under §141.86(b)(3), within 72 hours after the completion of the partial replacement of the service line. The system shall collect the sample and report the results of the analysis to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices post-marked within three business days of receiving the results shall be considered "on time."

141.84(d) (2) The water system shall provide the information required by paragraph (d)(1) of this section to the residents of individual dwellings by mail or by other methods approved by the State. In instances where multi-family dwellings are served by the line, the water system shall have the option to post the information at a conspicuous location.

141.84(e) The State shall require a system to replace lead service lines on a shorter schedule than that required by this section, taking into account the number of lead service lines in the system, where such a shorter replacement schedule is feasible. The State shall make this determination in writing and notify the system of its finding within 6 months after the system is triggered into lead service line replacement based on monitoring referenced in paragraph (a) of this section.

141.84(f) Any system may cease replacing lead service lines whenever first draw samples collected pursuant to §141.86(b)(2) meet the lead action level during each of two consecutive monitoring periods and the system submits the results to the State. If first draw tap samples collected in any such system thereafter exceeds the lead action level, the system shall recommence replacing lead service lines pursuant to paragraph (b)(2) of this section.

141.84(g) To demonstrate compliance with paragraphs (a) through (d) of this section, a system shall report to the State the information specified in §141.90(e).

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 65 FR 2005, Jan. 12, 2000; 72 FR 57815, Oct. 10, 2007]

§ 141.85 Public education and supplemental monitoring requirements.

All water systems must deliver a consumer notice of lead tap water monitoring results to persons served by the water system at sites that are tested, as specified in paragraph (d) of this section. A water system that exceeds the lead action level based on tap water samples collected in accordance with §141.86 shall deliver the public education materials contained in paragraph (a) of this section in accordance with the requirements in paragraph (b) of this section. Water systems that exceed the lead action level must sample the tap water of any customer who requests it in accordance with paragraph (c) of this section.

141.85(a) *Content of written public education materials —*

141.85(a) (1) *Community water systems and non-transient non-community water systems.* Water systems must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed below. In addition, language in paragraphs (a)(1)(i) through (ii) and (a)(1)(vi) of this section must be included in the materials, exactly as written, except for the text in brackets in these paragraphs for which the water system must include system-specific information. Any additional information presented by a water system must be consistent with the information below and be in plain language that can be understood by the general public. Water systems must submit all written public education materials to the State prior to delivery. The State may require the system to obtain approval of the content of written public materials prior to delivery.

141.85(a) (1) (i) IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF WATER SYSTEM] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

141.85(a) (1) (ii) *Health effects of lead.* Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

141.85(a) (1) (iii) *Sources of lead.*

141.85(a) (1) (iii)(A) Explain what lead is.

141.85(a) (1) (iii) (B) Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home/building plumbing materials and service lines that may contain lead.

141.85(a) (1) (iii) (C) Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

141.85(a) (1) (iv) Discuss the steps the consumer can take to reduce their exposure to lead in drinking water.

141.85(a) (1) (iv) (A) Encourage running the water to flush out the lead.

141.85(a) (1) (iv) (B) Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.

141.85(a) (1) (iv) (C) Explain that boiling water does not reduce lead levels.

141.85(a) (1) (iv) (D) Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.

141.85(a) (1) (iv) (E) Suggest that parents have their child's blood tested for lead.

141.85(a) (1) (v) Explain why there are elevated levels of lead in the system's drinking water (if known) and what the water system is doing to reduce the lead levels in homes/buildings in this area.

141.85(a) (1) (vi) For more information, call us at [INSERT YOUR NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT YOUR WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at *http://www.epa.gov/lead* or contact your health care provider.

141.85(a) (2) *Community water systems.* In addition to including the elements specified in paragraph (a)(1) of this section, community water systems must:

141.85(a) (2) (i) Tell consumers how to get their water tested.

141.85(a) (2) (ii) Discuss lead in plumbing components and the difference between low lead and lead free.

141.85(b) *Delivery of public education materials.*

141.85(b) (1) For public water systems serving a large proportion of non-English speaking consumers, as determined by the State, the public education materials must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the public education materials or to request assistance in the appropriate language.

141.85(b) (2) A community water system that exceeds the lead action level on the basis of tap water samples collected in accordance with §141.86, and that is not already conducting public education tasks under this section, must conduct the public education tasks under this section within 60 days after the end of the monitoring period in which the exceedance occurred:

141.85(b) (2) (i) Deliver printed materials meeting the content requirements of paragraph (a) of this section to all bill paying customers.

141.85(b) (2) (ii)(A) Contact customers who are most at risk by delivering education materials that meet the content requirements of paragraph (a) of this section to local public health agencies even if they are not located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users. The water system must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community based organizations serving target populations, which may include organizations outside the service area of the water system. If such lists are provided, systems must deliver education materials that meet the content requirements of paragraph (a) of this section to all organizations on the provided lists.

141.85(b) (2) (ii) (B) Contact customers who are most at risk by delivering materials that meet the content requirements of paragraph (a) of this section to the following organizations listed in 1 through 6 that are located within the water system's

service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users:

141.85(b) (2) (ii) (B) (*1*) Public and private schools or school boards.

141.85(b) (2) (ii) (B) (*2*) Women, Infants and Children (WIC) and Head Start programs.

141.85(b) (2) (ii) (B) (*3*) Public and private hospitals and medical clinics.

141.85(b) (2) (ii) (B) (*4*) Pediatricians.

141.85(b) (2) (ii) (B) (*5*) Family planning clinics.

141.85(b) (2) (ii) (B) (*6*) Local welfare agencies.

141.85(b) (2) (ii) (C) Make a good faith effort to locate the following organizations within the service area and deliver materials that meet the content requirements of paragraph (a) of this section to them, along with an informational notice that encourages distribution to all potentially affected customers or users. The good faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if the agencies are not located within the water system's service area:

141.85(b) (2) (ii) (C) (*1*) Licensed childcare centers

141.85(b) (2) (ii) (C) (*2*) Public and private preschools.

141.85(b) (2) (ii) (C) (*3*) Obstetricians-Gynecologists and Midwives.

141.85(b) (2) (iii) No less often than quarterly, provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the following statement exactly as written except for the text in brackets for which the water system must include system-specific information: [INSERT NAME OF WATER SYSTEM] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF WATER SYSTEM] [or visit (INSERT YOUR WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the State; specifically, the State may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

141.85(b) (2) (iv) Post material meeting the content requirements of paragraph (a) of this section on the water system's Web site if the system serves a population greater than 100,000.

141.85(b) (2) (v) Submit a press release to newspaper, television and radio stations.

141.85(b) (2) (vi) In addition to paragraphs (b)(2)(i) through (v) of this section, systems must implement at least three activities from one or more categories listed below. The educational content and selection of these activities must be determined in consultation with the State.

141.85(b) (2) (vi) (A) Public Service Announcements.

141.85(b) (2) (vi) (B) Paid advertisements.

141.85(b) (2) (vi) (C) Public Area Information Displays.

141.85(b) (2) (vi) (D) E-mails to customers.

141.85(b) (2) (vi) (E) Public Meetings.

141.85(b) (2) (vi) (F) Household Deliveries.

141.85(b) (2) (vi) (G) Targeted Individual Customer Contact.

141.85(b) (2) (vi) (H) Direct material distribution to all multi-family homes and institutions.

141.85(b) (2) (vi) (I) Other methods approved by the State.

141.85(b) (2) (vii) For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the State has established an alternate monitoring period, the last day of that period.

141.85(b) (3) As long as a community water system exceeds the action level, it must repeat the activities pursuant to paragraph (b)(2) of this section as described in paragraphs (b)(3)(i) through (iv) of this section.

141.85(b) (3) (i) A community water system shall repeat the tasks contained in paragraphs (b)(2)(i), (ii) and (vi) of this section every 12 months.

141.85(b) (3) (ii) A community water system shall repeat tasks contained in paragraph (b)(2)(iii) of this section with each billing cycle.

141.85(b) (3) (iii) A community water system serving a population greater than 100,000 shall post and retain material on a publicly accessible Web site pursuant to paragraph (b)(2)(iv) of this section.

141.85(b) (3) (iv) The community water system shall repeat the task in paragraph (b)(2)(v) of this section twice every 12 months on a schedule agreed upon with the State. The State can allow activities in paragraph (b)(2) of this section to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the State in advance of the 60-day deadline.

141.85(b) (4) Within 60 days after the end of the monitoring period in which the exceedance occurred (unless it already is repeating public education tasks pursuant to paragraph (b)(5) of this section), a non-transient non-community water system shall deliver the public education materials specified by paragraph (a) of this section as follows:

141.85(b) (4) (i) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and

141.85(b) (4) (ii) Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the non-transient non-community water system. The State may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

141.85(b) (4) (iii) For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the State has established an alternate monitoring period, the last day of that period.

141.85(b) (5) A non-transient non-community water system shall repeat the tasks contained in paragraph (b)(4) of this section at least once during each calendar year in which the system exceeds the lead action level. The State can allow activities in (b)(4) of this section to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the State in advance of the 60-day deadline.

141.85(b) (6) A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month monitoring period conducted pursuant to §141.86. Such a system shall recommence public education in accordance with this section if it subsequently exceeds the lead action level during any monitoring period.

141.85(b) (7) A community water system may apply to the State, in writing (unless the State has waived the requirement for prior State approval), to use only the text specified in paragraph (a)(1) of this section in lieu of the text in paragraphs (a)(1) and (a)(2) of this section and to perform the tasks listed in paragraphs (b)(4) and (b)(5) of this section in lieu of the tasks in paragraphs (b)(2) and (b)(3) of this section if:

141.85(b) (7) (i) The system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

141.85(b) (7) (ii) The system provides water as part of the cost of services provided and does not separately charge for water consumption.

141.85(b) (8) A community water system serving 3,300 or fewer people may limit certain aspects of their public education programs as follows:

141.85(b) (8) (i) With respect to the requirements of paragraph (b)(2)(vi) of this section, a system serving 3,300 or fewer must implement at least one of the activities listed in that paragraph.

141.85(b) (8) (ii) With respect to the requirements of paragraph (b)(2)(ii) of this section, a system serving 3,300 or fewer people may limit the distribution of the public education materials required under that paragraph to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.

141.85(b) (8) (iii) With respect to the requirements of paragraph (b)(2)(v) of this section, the State may waive this requirement for systems serving 3,300 or fewer persons as long as system distributes notices to every household served by the system.

141.85(c) *Supplemental monitoring and notification of results.* A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with §141.86 shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

141.85(d) *Notification of results —*

141.85(d) (1) *Reporting requirement.* All water systems must provide a notice of the individual tap results from lead tap water monitoring carried out under the requirements of §141.86 to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested).

141.85(d) (2) *Timing of notification.* A water system must provide the consumer notice as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.

141.85(d) (3) *Content.* The consumer notice must include the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, list steps consumers can take to reduce exposure to lead in drinking water and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from §141.153(c).

141.85(d) (4) *Delivery.* The consumer notice must be provided to persons served at the tap that was tested, either by mail or by another method approved by the State. For example, upon approval by the State, a non-transient non-community water system could post the results on a bulletin board in the facility to allow users to review the information. The system must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

[72 FR 57815, Oct. 10, 2007]

§ 141.86 Monitoring requirements for lead and copper in tap water.

141.86(a) *Sample site location.*

141.86(a) (1) By the applicable date for commencement of monitoring under paragraph (d)(1) of this section, each water system shall complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this section, and which is sufficiently large to ensure that the water system can collect the number of lead and copper tap samples required in paragraph (c) of this section. All sites from which first draw samples are collected shall be selected from this pool of targeted sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

141.86(a) (2) A water system shall use the information on lead, copper, and galvanized steel that it is required to collect under §141.42(d) of this part [special monitoring for corrosivity characteristics] when conducting a materials evaluation. When an evaluation of the information collected pursuant to §141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in paragraph (a) of this section, the water system shall review the sources of information listed below in order to identify a sufficient number of sampling sites. In addition, the system shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities):

141.86(a) (2)(i) All plumbing codes, permits, and records in the files of the building department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system;

141.86(a) (2)(ii) All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and

141.86(a) (2) (iii) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations.

141.86(a) (3) The sampling sites selected for a community water system's sampling pool ("tier I sampling sites") shall consist of single family structures that:

141.86(a) (3) (i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

141.86(a) (3) (ii) Are served by a lead service line. When multiple-family residences comprise at least 20 percent of the structures served by a water system, the system may include these types of structures in its sampling pool.

141.86(a) (4) Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with "tier 2 sampling sites", consisting of buildings, including multiple-family residences that:

141.86(a) (4) (i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

141.86(a) (4) (ii) Are served by a lead service line.

141.86(a) (5) Any community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with "tier 3 sampling sites", consisting of single family structures that contain copper pipes with lead solder installed before 1983. A community water system with insufficient tier 1, tier 2, and tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. For the purpose of this paragraph, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

141.86(a) (6) The sampling sites selected for a non-transient noncommunity water system ("tier I sampling sites") shall consist of buildings that:

141.86(a) (6) (i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

141.86(a) (6) (ii) Are served by a lead service line.

141.86(a) (7) A non-transient non-community water system with insufficient tier 1 sites that meet the targeting criteria in paragraph (a)(6) of this section shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the non-transient non-community water system shall use representative sites throughout the distribution system. For the purpose of this paragraph, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

141.86(a) (8) Any water system whose distribution system contains lead service lines shall draw 50 percent of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50 percent of the samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line shall collect first-draw samples from all of the sites identified as being served by such lines.

141.86(b) *Sample collection methods.*

141.86(b) (1) All tap samples for **lead and copper** collected in accordance with this subpart, with the exception of lead service line samples collected under §141.84(c) and samples collected under paragraph (b)(5) of this section, shall be first-draw samples.

141.86(b) (2) Each first-draw tap sample for **lead and copper** shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours. First-draw samples from residential housing shall be collected from the cold water kitchen tap or bathroom sink tap. First-draw samples from a nonresidential building shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. Non-first-draw samples collected in lieu of first-draw samples pursuant to paragraph (b)(5) of this section shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. First-draw samples may be collected by the system or the system may allow residents to collect first-draw samples after instructing the residents of the sampling

procedures specified in this paragraph. To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

141.86(b) (3) Each service line sample shall be one liter in volume and have stood motionless in the lead service line for at least six hours. Lead service line samples shall be collected in one of the following three ways:

141.86(b) (3) (i) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line;

141.86(b) (3) (ii) Tapping directly into the lead service line; or

141.86(b) (3) (iii) If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

141.86(b) (4) A water system shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

141.86(b) (5) A non-transient non-community water system, or a community water system that meets the criteria of §141.85(b)(7), that does not have enough taps that can supply first-draw samples, as defined in §141.2, may apply to the State in writing to substitute non-first-draw samples. Such systems must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The State has the discretion to waive the requirement for prior State approval of non-first-draw sample sites selected by the system, either through State regulation or written notification to the system.

141.86(c) *Number of samples.* Water systems shall collect at least one sample during each monitoring period specified in paragraph (d) of this section from the number of sites listed in the first column ("standard monitoring") of the table in this paragraph. A system conducting reduced monitoring under paragraph (d)(4) of this section shall collect at least one sample from the number of sites specified in the second column ("reduced monitoring") of the table in this paragraph during each monitoring period specified in paragraph (d)(4) of this section. Such reduced monitoring sites shall be representative of the sites required for standard monitoring. A public water system that has fewer than five drinking water taps, that can be used for human consumption meeting the sample site criteria of paragraph (a) of this section to reach the required number of sample sites listed in paragraph (c) of this section, must collect at least one sample from each tap and then must collect additional samples from those taps on different days during the monitoring period to meet the required number of sites. Alternatively the State may allow these public water systems to collect a number of samples less than the number of sites specified in paragraph (c) of this section, provided that 100 percent of all taps that can be used for human consumption are sampled. The State must approve this reduction of the minimum number of samples in writing based on a request from the system or onsite verification by the State. States may specify sampling locations when a system is conducting reduced monitoring. The table is as follows:

System size (number of people served)	Number of sites (standard monitoring)	Number of sites (reduced monitoring)
>100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
≤100	5	5

141.86(d) *Timing of monitoring—*

141.86(d) (1) *Initial tap sampling.*

The first six-month monitoring period for small, medium-size and large systems shall begin on the following dates:

System size (No. people served)	First six-month monitoring period begins on
>50,000	January 1, 1992.
3,301 to 50,000	July 1, 1992.
≤3,300	July 1, 1993.

141.86(d) (1) (i) All large systems shall monitor during two consecutive six-month periods.

141.86(d) (1) (ii) All small and medium-size systems shall monitor during each six-month monitoring period until:

141.86(d) (1) (ii) (A) The system exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment requirements under §141.81, in which case the system shall continue monitoring in accordance with paragraph (d)(2) of this section, or

141.86(d) (1) (ii) (B) The system meets the **lead and copper** action levels during two consecutive six-month monitoring periods, in which case the system may reduce monitoring in accordance with paragraph (d)(4) of this section.

141.86(d) (2) *Monitoring after installation of corrosion control and source water treatment.*

141.86(d) (2) (i) Any large system which installs optimal corrosion control treatment pursuant to §141.81(d)(4) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.81(d)(5).

141.86(d) (2) (ii) Any small or medium-size system which installs optimal corrosion control treatment pursuant to §141.81(e)(5) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.81(e)(6).

141.86(d) (2) (iii) Any system which installs source water treatment pursuant to §141.83(a)(3) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.83(a)(4).

141.86(d) (3) *Monitoring after State specifies water quality parameter values for optimal corrosion control.* After the State specifies the values for water quality control parameters under §141.82(f), the system shall monitor during each subsequent six-month monitoring period, with the first monitoring period to begin on the date the State specifies the optimal values under §141.82(f).

141.86(d) (4) *Reduced monitoring.*

141.86(d) (4) (i) A small or medium-size water system that meets the **lead and copper** action levels during each of two consecutive six-month monitoring periods may reduce the number of samples in accordance with paragraph (c) of this section, and reduce the frequency of sampling to once per year. A small or medium water system collecting fewer than five samples as specified in paragraph (c) of this section, that meets the **lead and copper** action levels during each of two consecutive six-month monitoring periods may reduce the frequency of sampling to once per year. In no case can the system reduce the number of samples required below the minimum of one sample per available tap. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

141.86(d) (4) (ii) Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during each of two consecutive six-month monitoring periods may reduce the frequency of monitoring to once per year and reduce the number of **lead and copper** samples in accordance with paragraph (c) of this section if it receives written approval from the State. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period. The State shall review monitoring, treatment, and other relevant information submitted by the water system in accordance with §141.90, and shall notify the system in writing when it determines the system is eligible to commence reduced monitoring pursuant to this paragraph. The State shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

141.86(d) (4) (iii) A small or medium-size water system that meets the **lead and copper** action levels during three consecutive years of monitoring may reduce the frequency of monitoring for **lead and copper** from annually to once every three years. Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during three consecutive years of monitoring may reduce the frequency of monitoring from annually to once every three years if it receives written approval from the State. Samples collected once every three years shall be collected no later than every third calendar year. The State shall review monitoring, treatment, and other relevant information submitted by the water system in accordance with §141.90, and shall notify the system in writing when it determines the system is eligible to reduce the frequency of monitoring to once every three years. The State shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

141.86(d) (4) (iv) A water system that reduces the number and frequency of sampling shall collect these samples from representative sites included in the pool of targeted sampling sites identified in paragraph (a) of this section. Systems sampling annually or less frequently shall conduct the **lead and copper** tap sampling during the months of June, July, August, or September unless the State has approved a different sampling period in accordance with paragraph (d)(4)(iv)(A) of this section.

141.86(d) (4) (iv) (A) The State, at its discretion, may approve a different period for conducting the **lead and copper** tap sampling for systems collecting a reduced number of samples. Such a period shall be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a non-transient non-community water system that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the State shall designate a period that represents a time of normal operation for the system. This sampling shall begin during the period approved or designated by the State in the calendar year immediately following the end of the second consecutive six-month monitoring period for systems initiating annual monitoring and during the three-year period following the end of the third consecutive calendar year of annual monitoring for systems initiating triennial monitoring.

141.86(d) (4) (iv) (B) Systems monitoring annually, that have been collecting samples during the months of June through September and that receive State approval to alter their sample collection period under paragraph (d)(4)(iv)(A) of this section, must collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling. Systems monitoring triennially that have been collecting samples during the months of June through September, and receive State approval to alter the sampling collection period as per paragraph (d)(4)(iv)(A) of this section, must collect their next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling must be collected annually or triennially, as required by this section. Small systems with waivers, granted pursuant to paragraph (g) of this section, that have been collecting samples during the months of June through September and receive State approval to alter their sample collection period under paragraph (d)(4)(iv)(A) of this section must collect their next round of samples before the end of the 9-year period.

141.86(d) (4) (v) Any water system that demonstrates for two consecutive 6-month monitoring periods that the tap water lead level computed under §141.80(c)(3) is less than or equal to 0.005 mg/L and the tap water copper level computed under §141.80(c)(3) is less than or equal to 0.65 mg/L may reduce the number of samples in accordance with paragraph (c) of this section and reduce the frequency of sampling to once every three calendar years.

141.86(d) (4) (vi)(A) A small or medium-size water system subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section. Such a system shall also conduct water quality parameter monitoring in accordance with §141.87(b), (c) or (d) (as appropriate) during the monitoring period in which it exceeded the action level. Any such system may resume annual monitoring for **lead and copper** at the tap at the reduced number of sites specified in paragraph (c) of this section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of paragraph (d)(4)(i) of this section and/or may resume triennial monitoring for **lead and copper** at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (d)(4)(iii) or (d)(4)(v) of this section.

141.86(d) (4) (vi) (B) Any water system subject to the reduced monitoring frequency that fails to meet the lead action level during any four-month monitoring period or that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State under §141.82(f) for more than nine days in any six-month period specified in §141.87(d) shall conduct tap water sampling for **lead and copper** at the frequency specified in paragraph (d)(3) of this section, collect the number of samples specified for standard monitoring under paragraph (c) of this section, and shall resume monitoring for water quality parameters within the distribution system in accordance with §141.87(d). This standard tap water sampling shall begin no later than the six-month period beginning January 1 of the calendar year following the lead action level exceedance or water quality parameter excursion. Such a system may resume reduced monitoring for **lead and copper** at the tap and for water quality parameters within the distribution system under the following conditions:

141.86(d) (4) (vi) (B) (*1*) The system may resume annual monitoring for **lead and copper** at the tap at the reduced number of sites specified in paragraph (c) of this section after it has completed two subsequent six-month rounds of monitoring that meet the criteria of paragraph (d)(4)(ii) of this section and the system has received written approval from the State that it is appropriate to resume reduced monitoring on an annual frequency. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

141.86(d) (4) (vi) (B) (*2*) The system may resume triennial monitoring for **lead and copper** at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (d)(4)(iii) or (d)(4)(v) of this section and the system has received written approval from the State that it is appropriate to resume triennial monitoring.

141.86(d) (4) (vi) (B) (*3*) The system may reduce the number of water quality parameter tap water samples required in accordance with §141.87(e)(1) and the frequency with which it collects such samples in accordance with §141.87(e)(2). Such a system may not resume triennial monitoring for water quality parameters at the tap until it demonstrates, in accordance with the requirements of §141.87(e)(2), that it has re-qualified for triennial monitoring.

141.86(d) (4) (vii) Any water system subject to a reduced monitoring frequency under paragraph (d)(4) of this section shall notify the State in writing in accordance with §141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require the system to resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

141.86(e) *Additional monitoring by systems.* The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and the State in making any determinations (*i.e.* , calculating the 90th percentile lead or copper level) under this subpart.

141.86(f) *Invalidation of lead or copper tap water samples.* A sample invalidated under this paragraph does not count toward determining lead or copper 90th percentile levels under §141.80(c)(3) or toward meeting the minimum monitoring requirements of paragraph (c) of this section.

141.86(f) (1) The State may invalidate a lead or copper tap water sample at least if one of the following conditions is met.

141.86(f) (1) (i) The laboratory establishes that improper sample analysis caused erroneous results.

141.86(f) (1) (ii) The State determines that the sample was taken from a site that did not meet the site selection criteria of this section.

141.86(f) (1) (iii) The sample container was damaged in transit.

141.86(f) (1) (iv) There is substantial reason to believe that the sample was subject to tampering.

141.86(f) (2) The system must report the results of all samples to the State and all supporting documentation for samples the system believes should be invalidated.

141.86(f) (3) To invalidate a sample under paragraph (f)(1) of this section, the decision and the rationale for the decision must be documented in writing. States may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

141.86(f) (4) The water system must collect replacement samples for any samples invalidated under this section if, after the invalidation of one or more samples, the system has too few samples to meet the minimum requirements of paragraph (c) of this section. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the State invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

141.86(g) *Monitoring waivers for small systems.* Any small system that meets the criteria of this paragraph may apply to the State to reduce the frequency of monitoring for **lead and copper** under this section to once every nine years (*i.e.,* a "full waiver") if it meets all of the materials criteria specified in paragraph (g)(1) of this section and all of the monitoring criteria

specified in paragraph (g)(2) of this section. If State regulations permit, any small system that meets the criteria in paragraphs (g)(1) and (2) of this section only for lead, or only for copper, may apply to the State for a waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (*i.e.,* a "partial waiver").

141.86(g) (1) *Materials criteria.* The system must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials and/or copper-containing materials, as those terms are defined in this paragraph, as follows:

141.86(g) (1) (i) *Lead.* To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (*i.e.,* a "lead waiver"), the water system must provide certification and supporting documentation to the State that the system is free of all lead-containing materials, as follows:

141.86(g) (1) (i) (A) It contains no plastic pipes which contain lead plasticizers, or plastic service lines which contain lead plasticizers; and

141.86(g) (1) (i) (B) It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of any standard established pursuant to 42 U.S.C. 300g–6(e) (SDWA section 1417(e)).

141.86(g) (1) (ii) *Copper.* To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (*i.e.,* a "copper waiver"), the water system must provide certification and supporting documentation to the State that the system contains no copper pipes or copper service lines.

141.86(g) (2) *Monitoring criteria for waiver issuance.* The system must have completed at least one 6-month round of standard tap water monitoring for **lead and copper** at sites approved by the State and from the number of sites required by paragraph (c) of this section and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing and/or copper-containing materials, as appropriate, meet the following criteria.

141.86(g) (2) (i) *Lead levels.* To qualify for a full waiver, or a lead waiver, the system must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.

141.86(g) (2) (ii) *Copper levels.* To qualify for a full waiver, or a copper waiver, the system must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.

141.86(g) (3) *State approval of waiver application.* The State shall notify the system of its waiver determination, in writing, setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the State may require the system to perform specific activities (e.g., limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small system must continue monitoring for **lead and copper** at the tap as required by paragraphs (d)(1) through (d)(4) of this section, as appropriate, until it receives written notification from the State that the waiver has been approved.

141.86(g) (4) *Monitoring frequency for systems with waivers.*

141.86(g) (4) (i) A system with a full waiver must conduct tap water monitoring for **lead and copper** in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites identified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section for both **lead and copper** to the State along with the monitoring results. Samples collected every nine years shall be collected no later than every ninth calendar year.

141.86(g) (4) (ii) A system with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites specified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section pertaining to the waived contaminant along with the monitoring results. Such a system also must continue to monitor for the non-waived contaminant in accordance with requirements of paragraph (d)(1) through (d)(4) of this section, as appropriate.

141.86(g) (4) (iii) Any water system with a full or partial waiver shall notify the State in writing in accordance with §141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source, as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State has the authority to require the system to add or modify waiver conditions (e.g., require recertification that

the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

141.86(g) (4) (iv) If a system with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate, (e.g., as a result of new construction or repairs), the system shall notify the State in writing no later than 60 days after becoming aware of such a change.

141.86(g) (5) *Continued eligibility.* If the system continues to satisfy the requirements of paragraph (g)(4) of this section, the waiver will be renewed automatically, unless any of the conditions listed in paragraph (g)(5)(i) through (g)(5)(iii) of this section occurs. A system whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring criteria of paragraphs (g)(1) and (g)(2) of this section.

141.86(g) (5) (i) A system with a full waiver or a lead waiver no longer satisfies the materials criteria of paragraph (g)(1)(i) of this section or has a 90th percentile lead level greater than 0.005 mg/L.

141.86(g) (5) (ii) A system with a full waiver or a copper waiver no longer satisfies the materials criteria of paragraph (g)(1)(ii) of this section or has a 90th percentile copper level greater than 0.65 mg/L.

141.86(g) (5) (iii) The State notifies the system, in writing, that the waiver has been revoked, setting forth the basis of its decision.

141.86(g) (6) *Requirements following waiver revocation.* A system whose full or partial waiver has been revoked by the State is subject to the corrosion control treatment and **lead and copper** tap water monitoring requirements, as follows:

141.86(g) (6) (i) If the system exceeds the lead and/or copper action level, the system must implement corrosion control treatment in accordance with the deadlines specified in §141.81(e), and any other applicable requirements of this subpart.

141.86(g) (6) (ii) If the system meets both the lead and the copper action level, the system must monitor for **lead and copper** at the tap no less frequently than once every three years using the reduced number of sample sites specified in paragraph (c) of this section.

141.86(g) (7) *Pre-existing waivers.* Small system waivers approved by the State in writing prior to April 11, 2000 shall remain in effect under the following conditions:

141.86(g) (7) (i) If the system has demonstrated that it is both free of lead-containing and copper-containing materials, as required by paragraph (g)(1) of this section and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of paragraph (g)(2) of this section, the waiver remains in effect so long as the system continues to meet the waiver eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the last time the system has monitored for **lead and copper** at the tap.

141.86(g) (7) (ii) If the system has met the materials criteria of paragraph (g)(1) of this section but has not met the monitoring criteria of paragraph (g)(2) of this section, the system shall conduct a round of monitoring for **lead and copper** at the tap demonstrating that it meets the criteria of paragraph (g)(2) of this section no later than September 30, 2000. Thereafter, the waiver shall remain in effect as long as the system meets the continued eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the round of monitoring conducted pursuant to paragraph (g)(2) of this section.

[56 FR 26548, June 7, 1991; 56 FR 32113, July 15, 1991; 57 FR 28788, June 29, 1992; as amended at 65 FR 2007, Jan. 12, 2000; 72 FR 57817, Oct. 10, 2007]

§ 141.87 Monitoring requirements for water quality parameters.

All large water systems, and all small- and medium-size systems that exceed the lead or copper action level shall monitor water quality parameters in addition to **lead and copper** in accordance with this section. The requirements of this section are summarized in the table at the end of this section.

141.87(a) *General requirements —*

141.87(a) (1) *Sample collection methods.*

141.87(a) (1) (i) Tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for ~~lead and copper~~ sampling under §141.86(a). [Note: Systems may find it convenient to conduct tap sampling for water quality parameters at sites used for coliform sampling under 40 CFR 141.21.]

141.87(a) (1) (ii) Samples collected at the entry point(s) to the distribution system shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.* , when water is representative of all sources being used).

141.87(a) (2) *Number of samples.*

141.87(a) (2) (i) Systems shall collect two tap samples for applicable water quality parameters during each monitoring period specified under paragraphs (b) through (e) of this section from the following number of sites.

System size (No. people served)	No. of sites for water quality parameters
>100,000	25
10,001–100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

141.87(a) (2) (ii) Except as provided in paragraph (c)(3) of this section, systems shall collect two samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in paragraph (b) of this section. During each monitoring period specified in paragraphs (c)–(e) of this section, systems shall collect one sample for each applicable water quality parameter at each entry point to the distribution system.

141.87(b) *Initial sampling* All large water systems shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each six-month monitoring period specified in §141.86(d)(1). All small and medium-size systems shall measure the applicable water quality parameters at the locations specified below during each six-month monitoring period specified in §141.86(d)(1) during which the system exceeds the lead or copper action level.

141.87(b)(1) At taps:

141.87(b)(1) (i) pH;

141.87(b)(1) (ii) Alkalinity;

141.87(b)(1) (iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

141.87(b)(1) (iv) Silica, when an inhibitor containing a silicate compound is used;

141.87(b)(1) (v) Calcium;

141.87(b)(1) (vi) Conductivity; and

141.87(b)(1) (vii) Water temperature.

141.87(b)(2) At each entry point to the distribution system: all of the applicable parameters listed in paragraph (b)(1) of this section.

141.87(c) *Monitoring after installation of corrosion control.* Any large system which installs optimal corrosion control treatment pursuant to §141.81(d)(4) shall measure the water quality parameters at the locations and frequencies specified below during each six-month monitoring period specified in §141.86(d)(2)(i). Any small or medium-size system which installs optimal corrosion control treatment shall conduct such monitoring during each six-month monitoring period specified in §141.86(d)(2)(ii) in which the system exceeds the lead or copper action level.

141.87(c) (1) At taps, two samples for:

141.87(c) (1) (i) pH;

141.87(c) (1) (ii) Alkalinity;

141.87(c) (1) (iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

141.87(c) (1) (iv) Silica, when an inhibitor containing a silicate compound is used;

141.87(c) (1) (v) Calcium, when calcium carbonate stabilization is used as part of corrosion control.

141.87(c) (2) Except as provided in paragraph (c)(3) of this section, at each entry point to the distribution system, at least one sample no less frequently than every two weeks (biweekly) for:

141.87(c) (2) (i) pH;

141.87(c) (2) (ii) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

141.87(c) (2) (iii) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

141.87(c) (3) Any ground water system can limit entry point sampling described in paragraph (c)(2) of this section to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated ground water sources mixes with water from treated ground water sources, the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this paragraph, the system shall provide to the State written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

141.87(d) *Monitoring after State specifies water quality parameter values for optimal corrosion control* . After the State specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under §141.82(f), all large systems shall measure the applicable water quality parameters in accordance with paragraph (c) of this section and determine compliance with the requirements of §141.82(g) every six months with the first six-month period to begin on either January 1 or July 1, whichever comes first, after the State specifies the optimal values under §141.82(f). Any small or medium-size system shall conduct such monitoring during each six-month period specified in this paragraph in which the system exceeds the lead or copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to §141.86(d)(4) at the time of the action level exceedance, the start of the applicable six-month monitoring period under this paragraph shall coincide with the start of the applicable monitoring period under §141.86(d)(4). Compliance with State-designated optimal water quality parameter values shall be determined as specified under §141.82(g).

141.87(e) *Reduced monitoring.*

141.87(e) (1) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under paragraph (d) of this section shall continue monitoring at the entry point(s) to the distribution system as specified in paragraph (c)(2) of this section. Such system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each six-month monitoring period.

System size (No. of people served)	Reduced No. of sites for water quality parameters
>100,000	10

10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

141.87(e) (2)(i) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in this paragraph (e)(1) of this section from every six months to annually. This sampling begins during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs. Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f), during three consecutive years of annual monitoring under this paragraph may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in paragraph (e)(1) of this section from annually to every three years. This sampling begins no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

141.87(e) (2) (ii) A water system may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in paragraph (e)(1) of this section to every three years if it demonstrates during two consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead specified in §141.89 (a)(1)(ii), that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L for copper in §141.80(c)(2), and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f). Monitoring conducted every three years shall be done no later than every third calendar year.

141.87(e) (3) A water system that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

141.87(e) (4) Any water system subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State in §141.82(f) for more than nine days in any six-month period specified in §141.82(g) shall resume distribution system tap water sampling in accordance with the number and frequency requirements in paragraph (d) of this section. Such a system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in paragraph (e)(1) of this section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that paragraph and/or may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (e)(2)(i) or (e)(2)(ii) of this section.

141.87(f) *Additional monitoring by systems.* The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and the State in making any determinations (*i.e.* , determining concentrations of water quality parameters) under this section or §141.82.

Summary of Monitoring Requirements for Water Quality Parameters[1]

Monitoring period	Parameters[2]	Location	Frequency
Initial monitoring	pH, alkalinity, orthophosphate or silica[3], calcium, conductivity, temperature	Taps and at entry point(s) to distribution system	Every 6 months.
After installation of corrosion control	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months.
	pH, alkalinity, dosage rate and concentration (if alkalinity adjusted as	Entry point(s) to distribution	No less frequently than every two weeks.

	part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	system[6]	
After State specifies parameter values for optimal corrosion control	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months.
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point(s) to distribution system[6]	No less frequently than every two weeks.
Reduced monitoring	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months, annually[7]or every 3 years[8]; reduced number of sites.
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point(s) to distribution system[6]	No less frequently than every two weeks.

[1]Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.

[2]Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.

[3]Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.

[4]Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.

[5]Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

[6]Ground water systems may limit monitoring to representative locations throughout the system.

[7]Water systems may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of monitoring.

[8]Water systems may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every 3 years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of annual monitoring. Water systems may accelerate to triennial monitoring for water quality parameters at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65 mg/L, and the range of water quality parameters designated by the State under §141.82(f) as representing optimal corrosion control during two consecutive six-month monitoring periods.

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 59 FR 33862, June 30, 1994; 65 FR 2010, Jan. 12, 2000; 72 FR 57818, Oct. 10, 2007]

§ 141.88 Monitoring requirements for lead and copper in source water.

141.88(a) *Sample location, collection methods, and number of samples.*

141.88(a) (1) A water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with §141.86 shall collect **lead and copper** source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods:

141.88(a) (1) (i) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). The system shall take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

141.88(a) (1) (ii) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point). The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

Note to paragraph **141.88(a) (1) (ii):** For the purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

141.88(a) (1) (iii) If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.,* when water is representative of all sources being used).

141.88(a) (1) (iv) The State may reduce the total number of samples which must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:

141.88(a) (1) (iv) (A) A follow-up sample shall be taken and analyzed within 14 days at each sampling point included in the composite; or

141.88(a) (1) (iv) (B) If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.

141.88(a) (2) Where the results of sampling indicate an exceedance of maximum permissible source water levels established under §141.83(b)(4), the State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If a State-required confirmation sample is taken for lead or copper, then the results of the initial and confirmation sample shall be averaged in determining compliance with the State-specified maximum permissible levels. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below the PQL shall either be considered as the measured value or be considered one-half the PQL.

141.88 (b) *Monitoring frequency after system exceeds tap water action level.* Any system which exceeds the lead or copper action level at the tap shall collect one source water sample from each entry point to the distribution system no later than six months after the end of the monitoring period during which the lead or copper action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the State has established an alternate monitoring period, the last day of that period.

141.88 (c) *Monitoring frequency after installation of source water treatment.* Any system which installs source water treatment pursuant to §141.83(a)(3) shall collect an additional source water sample from each entry point to the distribution system during two consecutive six-month monitoring periods by the deadline specified in §141.83(a)(4).

141.88 (d) *Monitoring frequency after State specifies maximum permissible source water levels or determines that source water treatment is not needed.*

141.88 (d) (1) A system shall monitor at the frequency specified below in cases where the State specifies maximum permissible source water levels under §141.83(b)(4) or determines that the system is not required to install source water treatment under §141.83(b)(2).

141.88 (d) (1) (i) A water system using only groundwater shall collect samples once during the three-year compliance period (as that term is defined in §141.2) in effect when the applicable State determination under paragraph (d)(1) of this section is made. Such systems shall collect samples once during each subsequent compliance period. Triennial samples shall be collected every third calendar year.

141.88 (d) (1) (ii) A water system using surface water (or a combination of surface and ground water) shall collect samples once during each calendar year, the first annual monitoring period to begin during the year in which the applicable State determination is made under paragraph (d)(1) of this section.

141.88 (d) (2) A system is not required to conduct source water sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the system under paragraph (d)(1) (i) or (ii) of this section.

141.88 (e) *Reduced monitoring frequency.*

141.88 (e) (1) A water system using only ground water may reduce the monitoring frequency for **lead and copper** in source water to once during each nine-year compliance cycle (as that term is defined in §141.2) provided that the samples are collected no later than every ninth calendar year and if the system meets one of the following criteria:

141.88 (e) (1) (i) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible **lead and copper** concentrations specified by the State in §141.83(b)(4) during at least three consecutive compliance periods under paragraph (d)(1) of this section; or

141.88 (e) (1) (ii) The State has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under paragraph (d)(1) of this section, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

141.88 (e) (2) A water system using surface water (or a combination of surface water and ground water) may reduce the monitoring frequency in paragraph (d)(1) of this section to once during each nine-year compliance cycle (as that term is defined in §141.2) provided that the samples are collected no later than every ninth calendar year and if the system meets one of the following criteria:

141.88 (e) (2) (i) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible **lead and copper** concentrations specified by the State in §141.83(b)(4) for at least three consecutive years; or

141.88 (e) (2) (ii) The State has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

141.88 (e) (3) A water system that uses a new source of water is not eligible for reduced monitoring for lead and/or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible **lead and copper** concentrations specified by the State in §141.83(a)(5).

[56 FR 26548, June 7, 1991; 57 FR 28788 and 28789, June 29, 1992, as amended at 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007]

§ 141.89 Analytical methods.

141.89(a) Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature shall be conducted with the methods in §141.23(k)(1).

141.89(a) (1) Analyses for alkalinity, calcium, conductivity, orthophosphate, pH, silica, and temperature may be performed by any person acceptable to the State. Analyses under this section for **lead and copper** shall only be conducted by laboratories that have been certified by EPA or the State. To obtain certification to conduct analyses for **lead and copper**, laboratories must:

141.89(a) (1) (i) Analyze Performance Evaluation samples, which include **lead and copper**, provided by or acceptable to EPA or the State at least once a year by each method for which the laboratory desires certification; and

141.89(a) (1) (ii) Achieve quantitative acceptance limits as follows:

141.89(a) (1) (ii) (A) For lead: ±30 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.005 mg/L. The Practical Quantitation Level, or PQL for lead is 0.005 mg/L.

141.89(a) (1) (ii) (B) For Copper: ±10 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.050 mg/L. The Practical Quantitation Level, or PQL for copper is 0.050 mg/L.

141.89(a) (1) (iii) Achieve the method detection limit for lead of 0.001 mg/L according to the procedures in appendix B of part 136 of this title. This need only be accomplished if the laboratory will be processing source water composite samples under §141.88(a)(1)(iv).

141.89(a) (1) (iv) Be currently certified by EPA or the State to perform analyses to the specifications described in paragraph (a)(1) of this section.

141.89(a) (2) States have the authority to allow the use of previously collected monitoring data for purposes of monitoring, if the data were collected and analyzed in accordance with the requirements of this subpart.

141.89(a) (3) All **lead and copper** levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for **lead and copper** in paragraph (a)(1)(ii) of this section. All levels below the **lead and copper** MDLs must be reported as zero.

141.89(a) (4) All copper levels measured between the PQL and the MDL must be either reported as measured or they can be reported as one-half the PQL (0.025 mg/L). All levels below the copper MDL must be reported as zero.

(b) [Reserved]

[56 FR 26548, June 7, 1991, as amended at 57 FR 28789, June 29, 1992; 57 FR 31847, July 17, 1992; 59 FR 33863, June 30, 1994; 59 FR 62470, Dec. 5, 1994; 64 FR 67466, Dec. 1, 1999; 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007]

§ 141.90 Reporting requirements.

All water systems shall report all of the following information to the State in accordance with this section.

141.90(a) *Reporting requirements for tap water monitoring for* ***lead and copper*** *and for water quality parameter monitoring.*

141.90(a) (1) Except as provided in paragraph (a)(1)(viii) of this section, a water system shall report the information specified below for all tap water samples specified in §141.86 and for all water quality parameter samples specified in §141.87 within the first 10 days following the end of each applicable monitoring period specified in §141.86 and §141.87 (*i.e.,* every six months, annually, every 3 years, or every 9 years). For monitoring periods with a duration less than six months, the end of the monitoring period is the last date samples can be collected during that period as specified in §§141.86 and 141.87.

141.90(a) (1) (i) The results of all tap samples for **lead and copper** including the location of each site and the criteria under §141.86(a) (3), (4), (5), (6), and/or (7) under which the site was selected for the system's sampling pool;

141.90(a) (1) (ii) Documentation for each tap water lead or copper sample for which the water system requests invalidation pursuant to §141.86(f)(2);

141.90(a) (1) (iii) [Reserved]

141.90(a) (1) (iv) The 90th percentile **lead and copper** concentrations measured from among all **lead and copper** tap water samples collected during each monitoring period (calculated in accordance with §141.80(c)(3)), unless the State calculates the system's 90th percentile **lead and copper** levels under paragraph (h) of this section;

141.90(a) (1) (v) With the exception of initial tap sampling conducted pursuant to §141.86(d)(1), the system shall designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed;

141.90(a) (1) (vi) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under §141.87 (b)–(e);

141.90(a) (1) (vii) The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under §141.87 (b)–(e);

141.90(a) (1) (viii) A water system shall report the results of all water quality parameter samples collected under §141.87(c) through (f) during each six-month monitoring period specified in §141.87(d) within the first 10 days following the end of the monitoring period unless the State has specified a more frequent reporting requirement.

141.90(a) (2) For a non-transient non-community water system, or a community water system meeting the criteria of §141.85(b)(7), that does not have enough taps that can provide first-draw samples, the system must either:

141.90(a) (2) (i) Provide written documentation to the State identifying standing times and locations for enough non-first-draw samples to make up its sampling pool under §141.86(b)(5) by the start of the first applicable monitoring period under §141.86(d) that commences after April 11, 2000, unless the State has waived prior State approval of non-first-draw sample sites selected by the system pursuant to §141.86(b)(5); or

141.90(a) (2) (ii) If the State has waived prior approval of non-first-draw sample sites selected by the system, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to §141.86(b)(5) and include this information with the lead and copper tap sample results required to be submitted pursuant to paragraph (a)(1)(i) of this section.

141.90(a) (3) At a time specified by the State, or if no specific time is designated by the State, then as early as possible prior to the addition of a new source or any long-term change in water treatment, a water system deemed to have optimized corrosion control under §141.81(b)(3), a water system subject to reduced monitoring pursuant to §141.86(d)(4), or a water system subject to a monitoring waiver pursuant to §141.86(g), shall submit written documentation to the State describing the change or addition. The State must review and approve the addition of a new source or long-term change in treatment before it is implemented by the water system. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes.

141.90(a) (4) Any small system applying for a monitoring waiver under §141.86(g), or subject to a waiver granted pursuant to §141.86(g)(3), shall provide the following information to the State in writing by the specified deadline:

141.90(a) (4) (i) By the start of the first applicable monitoring period in §141.86(d), any small water system applying for a monitoring waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of §§141.86(g)(1) and (2).

141.90(a) (4) (ii) No later than nine years after the monitoring previously conducted pursuant to §141.86(g)(2) or §141.86(g)(4)(i), each small system desiring to maintain its monitoring waiver shall provide the information required by §§141.86(g)(4)(i) and (ii).

141.90(a) (4) (iii) No later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small system with a monitoring waiver shall provide written notification to the State, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

141.90(a) (4) (iv) By October 10, 2000, any small system with a waiver granted prior to April 11, 2000 and that has not previously met the requirements of §141.86(g)(2) shall provide the information required by that paragraph.

141.90(a) (5) Each ground water system that limits water quality parameter monitoring to a subset of entry points under §141.87(c)(3) shall provide, by the commencement of such monitoring, written correspondence to the State that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

141.90(b) *Source water monitoring reporting requirements.*

141.90(b) (1) A water system shall report the sampling results for all source water samples collected in accordance with §141.88 within the first 10 days following the end of each source water monitoring period (*i.e.* , annually, per compliance period, per compliance cycle) specified in §141.88.

141.90(b) (2) With the exception of the first round of source water sampling conducted pursuant to §141.88(b), the system shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

141.90(c) *Corrosion control treatment reporting requirements.* By the applicable dates under §141.81, systems shall report the following information:

141.90(c) (1) For systems demonstrating that they have already optimized corrosion control, information required in §141.81(b) (2) or (3).

141.90(c) (2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under §141.82(a).

141.90(c) (3) For systems required to evaluate the effectiveness of corrosion control treatments under §141.82(c), the information required by that paragraph.

141.90(c) (4) For systems required to install optimal corrosion control designated by the State under §141.82(d), a letter certifying that the system has completed installing that treatment.

141.90(d) *Source water treatment reporting requirements.* By the applicable dates in §141.83, systems shall provide the following information to the State:

141.90(d)(1) If required under §141.83(b)(1), their recommendation regarding source water treatment;

141.90(d) (2) For systems required to install source water treatment under §141.83(b)(2), a letter certifying that the system has completed installing the treatment designated by the State within 24 months after the State designated the treatment.

141.90 (e) *Lead service line replacement reporting requirements.* Systems shall report the following information to the State to demonstrate compliance with the requirements of §141.84:

141.90 (e) (1) No later than 12 months after the end of a monitoring period in which a system exceeds the lead action level in sampling referred to in §141.84(a), the system must submit written documentation to the State of the material evaluation conducted as required in §141.86(a), identify the initial number of lead service lines in its distribution system at the time the system exceeds the lead action level, and provide the system's schedule for annually replacing at least 7 percent of the initial number of lead service lines in its distribution system.

141.90 (e) (2) No later than 12 months after the end of a monitoring period in which a system exceeds the lead action level in sampling referred to in §141.84(a), and every 12 months thereafter, the system shall demonstrate to the State in writing that the system has either:

141.90 (e) (2) (i) Replaced in the previous 12 months at least 7 percent of the initial lead service lines (or a greater number of lines specified by the State under §141.84(e)) in its distribution system, or

141.90 (e) (2) (ii) Conducted sampling which demonstrates that the lead concentration in all service line samples from an individual line(s), taken pursuant to §141.86(b)(3), is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced and/or which meet the criteria in §141.84(c) shall equal at least 7 percent of the initial number of lead lines identified under paragraph (e)(1) of this section (or the percentage specified by the State under §141.84(e)).

141.90 (e) (3) The annual letter submitted to the State under paragraph (e)(2) of this section shall contain the following information:

141.90 (e) (3) (i) The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule;

141.90 (e) (3) (ii) The number and location of each lead service line replaced during the previous year of the system's replacement schedule;

141.90 (e) (3) (iii) If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

141.90 (e) (4) Any system which collects lead service line samples following partial lead service line replacement required by §141.84 shall report the results to the State within the first ten days of the month following the month in which the system receives the laboratory results, or as specified by the State. States, at their discretion may eliminate this requirement to report these monitoring results. Systems shall also report any additional information as specified by the State, and in a time and manner prescribed by the State, to verify that all partial lead service line replacement activities have taken place.

141.90 (f) *Public education program reporting requirements.*

141.90 (f) (1) Any water system that is subject to the public education requirements in §141.85 shall, within ten days after the end of each period in which the system is required to perform public education in accordance with §141.85(b), send written documentation to the State that contains:

141.90 (f) (1) (i) A demonstration that the system has delivered the public education materials that meet the content requirements in §141.85(a) and the delivery requirements in §141.85(b); and

141.90 (f) (1) (ii) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the system delivered public education materials during the period in which the system was required to perform public education tasks.

141.90 (f) (2) Unless required by the State, a system that previously has submitted the information required by paragraph (f)(1)(ii) of this section need not resubmit the information required by paragraph (f)(1)(ii) of this section, as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.

141.90 (f) (3) No later than 3 months following the end of the monitoring period, each system must mail a sample copy of the consumer notification of tap results to the State along with a certification that the notification has been distributed in a manner consistent with the requirements of §141.85(d).

141.90 (g) *Reporting of additional monitoring data.* Any system which collects sampling data in addition to that required by this subpart shall report the results to the State within the first ten days following the end of the applicable monitoring period under §§141.86, 141.87 and 141.88 during which the samples are collected.

141.90 (h) *Reporting of 90th percentile lead and copper concentrations where the State calculates a system's 90th percentile concentrations.* A water system is not required to report the 90th percentile **lead and copper** concentrations measured from among all **lead and copper** tap water samples collected during each monitoring period, as required by paragraph (a)(1)(iv) of this section if:

141.90 (h) (1) The State has previously notified the water system that it will calculate the water system's 90th percentile **lead and copper** concentrations, based on the **lead and copper** tap results submitted pursuant to paragraph (h)(2)(i) of this section, and has specified a date before the end of the applicable monitoring period by which the system must provide the results of **lead and copper** tap water samples;

141.90 (h) (2) The system has provided the following information to the State by the date specified in paragraph (h)(1) of this section:

141.90 (h) (2) (i) The results of all tap samples for **lead and copper** including the location of each site and the criteria under §141.86(a)(3), (4), (5), (6), and/or (7) under which the site was selected for the system's sampling pool, pursuant to paragraph (a)(1)(i) of this section; and

141.90 (h) (2) (ii) An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed; and

141.90 (h) (3) The State has provided the results of the 90th percentile **lead and copper** calculations, in writing, to the water system before the end of the monitoring period.

[56 FR 26548, June 7, 1991; 57 FR 28789, June 29, 1992, as amended at 59 FR 33864, June 30, 1994; 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007]

§ 141.91 Recordkeeping requirements.

Any system subject to the requirements of this subpart shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, State determinations, and any other information required by §§141.81 through 141.88. Each water system shall retain the records required by this section for no fewer than 12 years.

[HYPERLINK "http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?type=simple;c=ecfr;cc=ecfr;sid=4b6a726014643972bd14501dc2b5ebce;idno=40;region=DIV1;q1=Lead%20and%20Copper;rgn=div6;view=text;node=40%3A23.0.1.1.3.8"] | [HYPERLINK "http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?type=simple;c=ecfr;cc=ecfr;sid=4b6a726014643972bd14501dc2b5ebce;idno=40;region=DIV1;q1=Lead%20and%20Copper;rgn=div6;view=text;node=40%3A23.0.1.1.3.10"]

141.2 Definitions: CDPHE 5/15/13 revised rules.

C1	D/OK? They add 3.1(a) no corresponding fed citation. "Definitions of general applicability to Colorado Primary drinking water regulations as specified in this article and shall be liberally construed to protect public health and the quality of DW supplied to the public.
C2	LS? Instead of all the definitions being in one section "in this part" they say "as used in the Colorado Primary DW Regulations". Which means that definitions are placed in specific sections and would not then apply generally? Is this less stringent? Are they limiting themselves?
C3	LS? Not defined in general definitions 3.1 but in article 26 LCR. They leave out the ref to 141.80C which defines action level and the ref to all of subpart I because the definition is in the LCR. Action level is used in other sections e.g., consumer confidence.
C4	LS? Definition not in general definitions 3.1, but in article 10 SWTR: Enhanced treatment for cryptosporidium. Bank filtration is a term that has application outside of article.
C5	LS? They left off the last sentence. Is this an EPA function only, "for the purposes of setting MCLs…"? Otherwise, they have reworded the definition.
C6	LS? They do not include the yrs of compliance cycles.
C7	LS? They do not include the yrs of compliance periods.
C8	LS Do not include "and preparation of a CPE report", it is included in 8.2.9c3. Definition not in general 3.1 but article 8.
C9	LS? Definition not in general 3.1 but article 17.

141.2 Definitions: CDPHE 5/15/13 revised rules.

C10	LS They add "or equivalent form of clarification" Sedimentation is not a type of clarification but a process of removing solids before filtration by gravity or separation. Adding "granular media" is OK because that is the type of media conventional uses.
C11	LS? Definition not in general 3.1 but article 26
C12	LS Entire definition not included.
C13	LS Entire definition not included.
C14	LS Their definition says microbial needs to be Giardia Lamblia. The summary can be up to 3 years of data not just 12 months, replaces summary with graphical representation. Doesn't reference procedures in subpart P and T. Definition not in general 3.1 but article 8.
C15	LS? Not included.
C16	LS? Deleted ref to dual samples apply to IDSE and subpart V. Stage 1 doesn't stop applying until 10/1/14 for some systems. Definition not in general 3.1 but article 25.
C17	LS? Definition not in general 3.1 but article 24.
C18	LS? Definition not in general 3.1 but article 24.

141.2 Definitions: CDPHE 5/15/13 revised rules.

C19	LS? Definition not in general 3.1 but article 8.
C20	LS? Leaves out one-liter and sample collection cite. Definition not in general 3.1 but article 26.
C21	LS? Definition not included
C22	LS? Definition not included
C23	LS? Definition not included
C24	LS? Definition broken into subsections in 3.1 but does not include the last two sentences.
C25	LS? Definition is technically different. Need to check with HQ if it is more accurate and they are being more stringent by being more prescriptive. Definition not in general 3.1 but article 22.
C26	LS? Definition is technically different. Need to check with HQ if it is more accurate and they are being more stringent by being more prescriptive. Definition not in general 3.1 but article 22.
C27	LS? Definition is technically different. Need to check with HQ if it is more accurate and they are being more stringent by being more prescriptive. Definition not in general 3.1 but article 22.

141.2 Definitions: CDPHE 5/15/13 revised rules.

C28	LS Does not include "(five) after Haloacetic acids. There are many haloacetic acids it is only these five that are regulated. Definition not in general 3.1 but article 25.
C29	LS? Definition not included.
C30	LS? Not included
C31	LS? Not included
C32	LS? Definition not in general 3.1 but article 26.
C33	LS? Definition not in general 3.1 but article 26.
C34	LS? Definition not included
C35	LS? Technically different check with HQ.
C36	LS? Part of language not included

141.2 Definitions: CDPHE 5/15/13 revised rules.

C37	LS? Definition not included
C38	LS? Definition not in general 3.1 but article 26.
C39	LS? Definition not included.
C40	LS? Definition not in general 3.1 but article 26.
C41	LS? Definition not included.
C42	LS? Definition not in general 3.1 but article 22.
C43	LS Leaves out "by surface water runoff". Definition not in general 3.1 but article 8.
C44	LS? Definition not in general 3.1 but article 26.
C45	LS? Definition not in general 3.1 but article 22.

C46	LS Definition not included
C47	LS Wording different. Definition not in general 3.1 but article 38.
C48	LS? Definition not in general 3.1 but article 26.
C49	LS? Definition not included
C50	LS? Only part of definition included.
C51	LS? Definition not included. This may be OK due to subpart H referring to the regs in the CFR.
C52	LS? Definition not in general 3.1 but article 24.
C53	LS? Definition not included
C54	LS? Definition not in general 3.1 but article 17.

C55	LS? Different wording. Definition not in general 3.1 but article 24.
C56	LS? Definition not in general 3.1 but article 25.
C57	LS? Not included
C58	LS? Definition not in general 3.1 but article 10.
C59	LS? Definition not in general 3.1 but article 8.
C60	LS? They add “if the supplier collects” our definition is broader by not saying who collects. Definition not in general 3.1 but article 26.
C61	LS? Definition does not match.

141.2 Definitions: CDPHE 5/15/13 revised rules.

141.2 Definitions: CDPHE 5/15/13 revised rules.

141.2 Definitions: CDPHE 5/15/13 revised rules.

LCR 141.80 and 141.81: CDPHE 5/15/13 revised rules.

C1	LS? Does not reference collected in accordance to the equivalent of 141.86. Does not include in more than 10% of the samples taken at the consumer tap. Crosswalk needs to reference 26.3.2 LCR action levels
C2	LS? Does not reference collected in accordance to the equivalent of 141.86. Does not include in more than 10% of the samples taken at the consumer tap. Crosswalk needs to reference 26.3.2 LCR action levels
C3	LS Not included. State can add language and ref 26.1 which is where their definition is.
C4	LS Their language is not equivalent. Feds refer to any system that complies with corrosion control treatment shall be incompliance. They can reference all of 26.4.
C5	LS 141 says "shall complete" they say "must begin".
C6	State reference not included in crosswalk
C7	State reference not included in crosswalk
C8 & C8(a)	State reference not included in crosswalk
C9	LS Language not included on continuing to conduct Lead and copper and water quality sampling in accordance with 141.86 d 3 & 141.87 d.

LCR 141.80 and 141.81: CDPHE 5/15/13 revised rules.

C10	LS Change reference to 26.4.3 “c”3.
C11	LS Change reference to 26.4.3 “c”1.
C12	LS No reference to monitoring in accordance to 141.86
C13	LS They do not reference 141.86 or 141.88.
C14	LS They do not include computed according to 141.80 c 3, no ref to methods.
C15	LS No reference to 141.86 and last sentences are not included, which includes State notification.
C16	LS? They do not include 141.81e which summarizes this section.
C17	LS They need to add “optimal” prior to water quality parameters.
C18	LS Language not included.

LCR 141.82: CDPHE 5/15/13 revised rules.

C19	LS Add if the "Department" requires.
C20	LS They don't ref 141.82 c1 treatments
C21	LS Need to ref 26.4.3d and add throughout its distribution system.
C22	LS Need to ref 26.4.3d
C23	LS They replace at the tap with throughout the distribution system. Given that Denver has stated that their responsibility ends at the main we need to ensure the State language says at the tap.
C24	LS They replace at the tap with throughout the distribution system. Given that Denver has stated that their responsibility ends at the main we need to ensure the State language says at the tap.
C25	LS They replace at the tap with throughout the distribution system. Given that Denver has stated that their responsibility ends at the main we need to ensure the State language says at the tap.
C26	LS They replace at the tap with throughout the distribution system. Given that Denver has stated that their responsibility ends at the main we need to ensure the State language says at the tap.
C27	LS No ref to paragraph f, all samples collected under 141.87 d through f and compliance determinations as specified under 141.87 d. This paragraph is so broken up it is extremely difficult to determine stringency.

LCR 141.82: CDPHE 5/15/13 revised rules.

C28	LS No ref to d or f.
C29	LS? They do not include this cite.
C30	LS? They do not include this cite.
C31	LS? They do not include this cite.
C32	LS? They do not include this cite.
C33	LS? No ref to paragraph b, 141.86 and 141.88
C34	LS? No state cite
C35	LS No State language in crosswalk that matches
C36	LS? No ref to 141.83b2 or step 1.

LCR 141.83: CDPHE 5/15/13 revised rules.

C37	LS? No ref to 1412.83b3 which ref b2 and no ref to step 2.
C38	Crosswalk does not include 141.86d2 monitoring
C39	LS? No ref to 141.83b4 and step 4
C40	LS? No ref 141.83b4 and continued source water monitoring 141.88d
C41	LS No ref to b2 or their 26.6.2.b
C42	LS? We use entering the distributions system they use at each entry point
C43	LS? Their crosswalk language does not match, grossly deficient.
C44	LS No ref to b2 or b4 and we say system shall be in they say may request.
C45	LS? No state language.

LCR 141.83 : CDPHE 5/15/13 revised rules.

C46	LS? No state language.
C47	LS? No state language.
C48	LS? No state language.
C49	LS? We say shall replace in accordance they say must begin as specified.
C50	LS They do not include ref to paragraph a. They do not include "identify the initial number of lead service lines" based on materials survey, and relevant legal authorities. They do not include "if monitoring is annually or less frequently, the end of the monitoring period is sept 30 of the calendar year in which the sampling occurs".
C51	LS Does not include the entire ref to 141.86b3 specifically 3 iii their 26.7.2a2 does not include "The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the Lead service line".
C52	LS See comment 51.
C53	LS They don't ref d1
C54	LS They don't ref paragraph a

LCR 141.84: CDPHE 5/15/13 revised rules.

C55	LS? They don't include "to demonstrate compliance with 141.84 a-d a system shall report.."
C56	LS They don't include consumer notification in cross walk and ref to 141.86 and ref to paragraph c which also ref 141.86.
C57	LS? They don't ref paragraph a1
C58	LS They don't include ref to sampling in accordance to 141.86.
C59	LS They don't include "contact customers who are most at risk by delivering…"
L60	LS They don't include "contact customers who are most at risk by delivering…"
C61	LS? They don't designate sept 30 which helps to clarify a deadline for a 60 day turnaround for PE.
C62	LS They do not ref PE materials in paragraph a or Change 26.8.4 a to ref 26.8.2 not 4
C63	LS? They don't designate sept 30 which helps to clarify a deadline for a 60 day turnaround for PE.

LCR 141.85: CDPHE 5/15/13 revised rules.

C64	LS They don't ref 141.86 in either the community or non community sections.
C65	LS They don't ref 141.86
C66	LS They don't ref 141.86
C67	LS? We say learns of they say receives.
C68	LS? They don't include ref 141.153c
C69	LS They need to ref 26.3.1 b in 26.3.1 a to cover ref for paragraph c
C70	LS They need to ref Table 26-1 in 26.3.1c to capture ref to before 1983
C71	LS They need to ref Table 26-1 in 26.3.1c to capture ref to before 1983
C72	LS? They don't include the refs to the exceptions to first draw samples for lead service line samples.

LCR 141.86: CDPHE 5/15/13 revised rules.

73	LS? They don't have language that says that if the resident takes the sample the system can't challenge the accuracy. Language is cut off in the crosswalk. Should 1 liter be in 26.3.3 d as opposed to 26.3.3.d.1?
C74	LS They do not include the language to calculate volume of water.
C75	LS? Ref not included.
C76	LS They don't ref paragraph a. The state does not allow systems to collect less than the number in c—more stringent.
C77	LS They don't include language. This explains that a system that triggers corrosion control doesn't have to monitor until corrosion control is installed.
C78	LS They don't include language.
C79	LS References not included.
C80	LS References not included.
C81	LS References not included.

LCR 141.86: CDPHE 5/15/13 revised rules.

C82	LS References not included.
C83	LS Not correct matching language
C84	LS They don't include language "in no case …"
C85	LS Language does not match.
C86	LS Language does not match.
C87	LS They don't include ref to paragraph a.
C88	LS They don't include language on small system waiver and 9 yrs. Also no ref to d4ivA
C89	LS? They don't include refs to how the action level is computed 141.80c3
C90	LS They don't include ref to 141.87bcd.

LCR 141.86: CDPHE 5/15/13 revised rules.

C91	LS Language does not match. "fails to operate at or above WQP specified 141.82f…
C92	LS Language does not match. This section is just a mess
C93	LS Language does not match.
C94	LS Language does not match.
C95	LS? They don't include ref to calculating 90% 141.80c3.
C96	LS? They don't include cite to paragraph f1.
C97	LS They don't include documentation to the state.
C98	LS They don't include documentation to the state.
C99	LS? They don't include full waiver.

LCR 141.86: CDPHE 5/15/13 revised rules.

C100	LS? They don't include full waiver.
C101	LS? They don't include limited monitoring.
C102	LS They need to cite the entire section 26.3.4.
C103	LS They need to cite the entire section 26.3.4.
C104	LS They don't include the state must approve prior to implementation.
C105	Cross walk incomplete include 26.3.5f
C106	Cross walk incomplete include 26.3.5f
C107	LS They don't include corrosion control
C108	LS Language does not match, they do not include paragraph.

LCR 141.86: CDPHE 5/15/13 revised rules.

C109	LS? They don't ref paragraph c
C110	LS? Old language not needed?
C111	LS? Old language not needed?
C112	LS? Old language not needed?
C113	LS The entire entry point sampling on where to sample not included. Very basic information.
C114	LS They do not include ref to paragraphs b-e. They separate that two samples are required for each water quality parameter location which will lead to even more confusion and more systems out of compliance.
C115	LS The entry point sample is very deficient. No ref to exception c3, no ref to paragraph b or c-e.
C116	LS They don't include refs
C117	Incorrect crosswalk ref should be 26.5.3a2

LCR 141.87: CDPHE 5/15/13 revised rules.

C118	LS? They don't include ref to b1. Had they put 26.5.3a1 as a subset of a2 and a3 it may have solved this issue. This is an issue throughout their rules
C119	LS They don't include ref 141.81d4, 141,86d2i, and 141.86d2ii. They have created severe problems with water quality parameters which are referenced in several sections when they tried to move them all together.
C120	LS? They don't include ref to c2 and do not include written.
C121	LS? They don't include 141.82g. They appear to be confusing optimal corrosion control treatment water quality parameters and lead and copper exceedances. The state has made this very confusing.
C122	LS They refs don't seem to match paragraph d. We say six months they say annual.
C123	LS They don't include the correct ref for 141.82f
C124	LS? They don't include refs141.89a1ii, 141.80c2 and 141.82f
C125	LS They don't include many refs. Crosswalk cites info that is just incorrect and not applicable to the paragraph.
C126	LS They don't include ref to samples collected in accordance with 141.86.

LCR 141.88: CDPHE 5/15/13 revised rules.

C127	LS Language not included.
C128	LS Language not included.
C129	LS Language not included.
C130	LS They don't include ref for 141.83b4
C131	LS? They don't ref 141.83a3 which leads to a string of references.
C132	LS? They don't ref 141.83b4.
C133	LS? They don't ref d1i and ii.
C134	LS? They don't ref 141.83b4 and d1.
C135	LS? They don't ref d1.

LCR 141.88 LCR: CDPHE 5/15/13 revised rules.

C136	LS? They don't ref d1.
C137	LS? They don't ref 141.83b4.
C138	LS? They don't ref 141.83a5
C139	LS? They don't include 141.86 and 87 nor include the last sentence
C140	LS? They don't include at least 141.86
C141	LS? They don't include 141.86f2
C142	LS? They don't include 141.80c3
C143	LS? They don't include 141.86d1
C144	LS? Language not included

LCR 141.90: CDPHE 5/15/13 revised rules.

C145	LS? Language not included
C146	LS? Language not included
C147	LS? They don't include 141.85b7 Language does not match.
C148	LS? They don't include at least 141.86 Language does not match.
C149	LS? They don't include at least 141.86 Language does not match.
C150	LS? They don't include 141.86d4 and g 141.81b3 Language does not match.
C151	LS? Refs not included
C152	LS language does not match.
C153	LS Does not adopt language

C154	LS? They don't include ref.
C155	LS? They don't include language which has a ref to dates.
C156	LS The state cites don't include all the information in the fed cites.
C157	LS The state cites don't include all the information in the fed cites.
C158	LS They don't include ref
C159	LS? There is so much information in these refs that are not included. Ref not included.
C160	LS They don't include ref.
C161	LS? They don't include ref
C162	LS? They don't include ref to 141.84

LCR 141.90: CDPHE 5/15/13 revised rules.

C163	LS? They don't ref 141.84a
C164	LS? They don't ref 141.84a
C165	LS? They don't ref 141.84e
C166	LS? They don't ref 141.84b3, .84c and .84e
C167	LS? References in e2 are flawed subsequently this is flawed no ref to e2.
C168	LS Location not included.
C169	LS They don't include ref to 141.84 and don't' include shall report the results to the state within 10 days…
C170	LS They don't include refs, don't' include written, language different.
C171	LS? Don't include was required.

LCR 141.90, 141.100 and .101: CDPHE 5/15/13 revised rules.

C172	LS? They don't include tap results.
C173	LS? Language not included
C174	LS They don't include ref a1iv
C175	LS? They don't include ref h2i.
C176	LS? They don't include ref h1.
C177	LS? They don't include ref 141.86a34567 and a1i.
C178	LS They don't include state must require.
C179	LS? Don't include must consider and other language.
C180	LS? Don't include state must and all consumers shall be protected.

CCR 141.151-.155: CDPHE 5/15/13 revised rules.

C1	LS? They don't include ref to 141.3.
C2	LS Not all the refs are in their article 46.
C3	LS? They don't include ref to 141.153d3.
C4	LS Not all of the material ref in 141.153 and 154 are includes in their refs.
C5	LS? They don't include 141.153 and .154.
C6	LS? They don't include sentence that systems are encouraged to report significant sources of contamination.
C7	LS? They don't include ref to 1415 or 1416 of the SDWA.
C8	LS? They don't include the language subject to mandatory monitoring,
C9	LS? They don't include the list of contaminants.

CCR 141.151-.155: CDPHE 5/15/13 revised rules.

C10	LS? They don't include the Table must include.
C11	LS? They don't include ref to c3.
C12	LS? They don't include except turbidity and NPDWR.
C13	LS? They don't include must include the highest LCAA for MCLs for TTHMs and HAA5 and ref to 141.64b2
C14	LS? They don't include the paragraph about IDSE. If a new system performs an IDSE this applies.
C15	LS? They don't include radon, and other contaminants.
C16	LS? They don't include ref to NPDWR.
C17	LS? They don't include the language "for lead, copper or both". CFR includes a general cite to subpart I and specific cites state does not include specific sites.
C18	LS? They don't include, violation of the …

CCR 141.151-.155: CDPHE 5/15/13 revised rules.

C19	LS? All language is adopted word for word under h1 except for this paragraph where they replace which for "that". Consistency.
C20	LS? They don't include, owner, operator or designee replace it with the system.
C21	LS? They don't include ref to h6i of this section.
C22	LS? They don't include required additional health information they use language requirements for CCR.
C23	LS? They don't include, all reports must prominently display the following language.
C24	LS? State language is unclear does not match intent of fed language.
C25	LS? They don't include fed or state language in crosswalk.
C26	LS? They don't include no later than the date the system is required to distribute the report to its customers and that certification is due within 3 months.
C27	LS? They don't include no later than the date the system is required to distribute the report to its customers

CCR 141.151-.155: CDPHE 5/15/13 revised rules.

C28	LS? They don't include first sentence regarding who is authorized to waive the CCR.
C29	LS? Cites don't match.
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CCR Appendix A -- Not included in crosswalk: CDPHE 5/15/13 revised rules.

Table 1 (T1)	LS In the TOC row they change the (THMs) to (TTHMs) which is less inclusive. Trihalomethanes is (THMs), Total trihalomethanes is (TTHMs).
T2	LS In theTOC row they change the (HAAs) to (HAA5s) which is less inclusive. Haloacetic acids is (HAAs), Haloacetic acids five is (HAA5s).
T3	LS? In the uranium row the CFR says pCi/L state says ug/L
T4	In the arsenic row under they say 0 fourth power, correct to say "0".
T5	LS In the acrylamide row under the MCL column they need to delete N/A and add TT for treatment technique.
T6	Delete hyphen not proper chemical nomenclature
T7	Delete hyphen not proper chemical nomenclature
T8	Delete hyphen not proper chemical nomenclature
T9	Delete hyphen not proper chemical nomenclature

CCR Appendix A : CDPHE 5/15/13 revised rules.

T10	Delete hyphen not proper chemical nomenclature
T11	Delete hyphen not proper chemical nomenclature. If word does not fit use smaller font.
C12	Under each major heading state says e.g., Synthetic Organic Chemicals (SOCs) the CFR uses the word contaminant. The state does say microbiological contaminants. Make consistent.
T13	State does not include any list the acronyms and abbrev. or ref to where they can be found the CFR provides a list at the end of Appendix A.
C	
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C	
C	

PN 141.201 to .211: CDPHE 5/15/13 revised rules.

C1	LS? They don't include the last paragraph which references App. A. They say all PWSs CFR list each type. In review of Table 1 (not in cross walk) they do not include ref to SDWA in the V & E section, otherwise OK.
C2	LS? They don't include the last paragraph which references App. A. In review of Table 2 Tier 1, 2, 3 they don't include NPDWRs
C3	LS? They don't include in accordance with this subpart.
C4	LS? They don't include ref to 141.31d.
C5	LS? They don't include ref to Appendix A. Review of the table in 141.202 follows, designated as C5T#. Table not included in crosswalk.
C5 T1	LS? In the row failure to test for fecal coliforms…, they don't include ref to MCLs. Include state ref 17.6a.
C5 T2	LS? In the row violation of the nitrate…, they don't include ref to MCLs 141.62. Include state ref 18.2.
C5 T3	LS? In both chlorine dioxide rows they don't include ref 141.65a.
C5 T4	LS In the row acute violation of the chlorine dioxide…, they need to add "when one or more samples taken in the dist system the day following an exceedance of the MRDL at the entrance of the distribution exceed the MRDL.

PN 141.201 to .211: CDPHE 5/15/13 revised rules.

C5 T5	LS In the row violation of the max turbidity, they don't include a ref to Appendix A which has the turbidity limits. They don't include "or where consultation does not take place within 24 hours after the system learns of the violation"
C5 T6	LS? In the row occurrence of a water borne…, they don't include ref to 141.2 definition for waterborne disease outbreak.
C5 T7	LS In the row for ground water… the refs are not equivalent.
C6	LS? They are inconsistent in the language in all citations they list under this paragraph. They don't include as soon as practical, systems learn of the violation. Their regs are inconsistent.
C7	LS? They don't include within 24 hours.
C8	LS? They don't include ref to Appendix A. In the Table in 203 they don't include the ref to 141.202a,they replace conditions with schedule in variances and exemptions, they replace "take" with "complete" for corrective action, don't include information in () and don't include ref 141.403a for ground water 4 log.
C9	LS? They don't include the language "even if the violation or situation is resolved" or "appropriate circumstances".
C10	LS? They don't include ref to 141.202a or the last paragraph.
C11	LS? They don't include the language "in the required time"

PN 141.201 to .211: CDPHE 5/15/13 revised rules.

C12	LS? They don't include ref to Appendix A. Review of the table in 141.204 follows, designated as C12T#. Table not included in crosswalk.
C12 T1 & 2	LS? In the row, Monitoring violations… they don't include ref to NPDWR and ref to 141.202a
C12 T3 & 4	LS. In the row, Failure to comply… they don't include ref to NPDWR and ref to 141.202a
C12 T5	LS? In the row, Operations of V & E they don't include ref 1415 and 1416 of the SDWA.
C12 T6	LS? In the row, Availability of unregulated… they don't include ref to 141.207.
C12 T7	In the last row, they don't include ref to 141.208.
C13	LS? They don't include V & E for posting.
C14	Crosswalk is incomplete for all of 141.204c. Same comment as C11 LS? They don't include the language "in the required time"
C15	LS? They don't include the ref to 141.204b.

PN 141.201 to .211: CDPHE 5/15/13 revised rules.

C16	LS? They don't include ref to NPDWR.
C17	LS? The language doesn't match up when you consider the ref in d3.
C18	LS? They don't include this language.
C19	LS? CFR says, language which nullifies they say, language that defeats.
C20	LS? They don't include multilingual.
C21	LS? They don't include ref to V & E.
C22	LS? They don't include paragraph.
C23	LS? PN is not in PN section
C24	LS? Although they ref the entire PN section the PN is not in PN section.

PN 141.201 to .211: CDPHE 5/15/13 revised rules.

C25	LS? PN is not in PN section. They don't include ref to 143.3, 141.23 or 141.62 and leave out the language, as soon as practical.
C26	LS? Not in PN section. Language does not match and they don't include ref to 141.11d. You would think that for an acute contaminant you would be prescriptive like the CFR yet they make it more difficult for the PWS by just citing PN more generally. This is not clear and not helpful to the PWS.
C27	LS? They don't include ref to 141.11d.
C28	LS? They don't include this paragraph.
C29	LS? Not in PN section. They don't include ref to 141.701 and .701c, and ref to community and Non-community systems.
C30	LS? Not in PN section. They don't include ref to 141.710, .710e .712 and .712e and ref to community and Non-community systems.
C	
C	
C	

PN Appendix A: CDPHE 5/15/13 revised rules.

T1	LS In the total coliform row ref 17.3 is not equivalent to 141.21(a-e).
T2	LS In the total coliform/E coli. row ref 17.6 is not equivalent to 141.21(e).
T3	LS In the SWTR violations other…, row ref 8.2.2 is not equivalent to 141.70-.73 and 141.170-.173 and 141.500- 141.553.
T4	LS In the SWTR violations other…, row 8.2.3 and 46.7 is not equivalent to 141.74, 141.172, 141.174, 141.530- 141.544 and 141.550- 141.564.
T5	LS In the SWTR filter backwash…, row ref 9.3 is not equivalent to 141.76(b), (d).
T6	LS In the SWTR enhanced …, row ref 10.2 is not equivalent to 141.701-.705 and 141.708-.709.
T7	LS In all of the inorganic rows 19.5 and 18.5 is not equivalent to 141.62(b).
T8	LS In all of the inorganic rows 19.3 and 18.3 is not equivalent to 141.23 (a), (c).
T9	LS In the lead and copper row the citations on the left are not equivalent to 141.80 -.85.

PN Appendix A: CDPHE 5/15/13 revised rules.

T10	LS In the lead and copper row the citations on the right are not equivalent to 141.86 -.89.
T11	LS In all of the SOC rows 21.6 is not equivalent to 141.61(c).
T12	LS In all of the SOC rows 21.3.4 is not equivalent to 141.24(h).
T13	LS In all of the VOC rows 21.6 is not equivalent to 141.61(a).
T14	LS In all of the VOC rows 21.3.2 is not equivalent to 141.24(f).
T15	LS In all of the Radionuclide rows 22.5 is not equivalent to 141.66(b)(c)(d)(e).
T16	LS In all of the radionuclide rows 22.3.3 and 22.3.2are not equivalent to 141.25(a) and .26(b).
T17	LS In TTHM/HAA rows 25.1.7 is not equivalent to 141.64(b).
T18	LS In TTHM/HAA rows 25.1.3 is not equivalent to 141.600-.605.

PN Appendix A: CDPHE 5/15/13 revised rules.

T19	LS In bromate to chlorine dioxide rows the citations listed are not equivalent to 141.65(a).
T20	LS In bromate to chlorine dioxide rows the citations listed are not equivalent to 141.132(a-c) or(a) and (c).
T21	LS In the control of DBP precursors row 24.9 is not equivalent to 141.135(a-b) or(a) and (c).
T22	LS In the control of DBP precursors row 24.3 is not equivalent to 141.135(a) and (d).
T23	LS In the development of a monitroing plan row 25.1.4 is not equivalent to 141.32(f).
T24	LS In the nickel row 19.3.2 is not equivalent to 141.23(c) and (k).
T25	LS In the V & E rows 43.10(f) is not equivalent to 1415 and 1416 of the SDWA.
T26	LS In the water borne disease row state includes the incorrect cite.
T27	LS In the source water positive for GWR row 11.4.4(a), 11.5.3(a) is not equivalent to 141.402 (g).

PN Appendix A: CDPHE 5/15/13 revised rules.

T28	LS CFR footnote # 2 not included.
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PN Appendix B: CDPHE 5/15/13 revised rules.

Table (T)1	LS? They combine all three turbidity (2a-c) into one entry. They do not include any of the footnotes (see comment 5).
T2	LS Remove the hyphen in dibromochloropropane. The contaminant fits in the table box no need for a hyphen.
T3	LS? They don't include the CFR footnote 1. They could ref their section 3.2 on abbrev.
T4	LS? They don't include the CFR footnote 2.
T5	LS? They don't include the CFR footnotes 4, 5, 6, 7, and 8. Turbidity row.
T6	LS? They don't include the CFR footnote 12 in asbestos row.
T7	LS? They don't include the CFR footnote15 in beta row.
T8	LS? They don't include the CFR footnote 17 in alpha row.

T9	Remove footnote 18 in the heading row of DBPs this is from the CFR

PN Appendix B: CDPHE 5/15/13 revised rules.

T10	LS? They don't include the CFR footnote 19 in the TTHM row
C11	LS? They don't include the CFR footnote 22 in the chlorine row.
C12	LS? They don't include the CFR footnote 23 in the chlorine row.
C	
C	
C	
C	

C	
C	

Drinking Water Supply Cyanotoxin Study

Timeline:

Region 8 will select 1 DW facility near Denver to participate in a pilot project in 2014.

Conference Call: Set up a possible call with facility, R8 staff, R8 lab and ORD for week of June 16th or 23rd

Sampling events: June – Sept, 2014

Sample Collection:

The purpose of this pilot project is to evaluate cyanotoxin (microcsytin) concentrations associated with algal bloom and to evaluate the effect of copper sulfate application on microcystin concentrations. The hypothesis is that plants using copper sulfate may inadvertently increase the cyanotoxin concentrations since the copper sulfate will lyse the algal cells, releasing the toxins.

The following sample types would be collected by the DW facility:

- Raw Water sample
- Sample collected after copper sulfate is applied
- Sample collected after key treatment processes (TBD)
- Finished water sample

Dual samples will be collected at each location. One sample will be shipped to EPA's ORD lab in Cincinnati and the other to the EPA Region 8 lab in Golden, Colorado. Sample preservation details are covered in the analytical methods section.

Sample Collection. Samples are to be collected at each sampling location in the appropriate bottles. [REF _Ref356207173 \h * MERGEFORMAT] lists the samples bottles that will be supplied. The number of bottles required will be based on the sample requirements at a given facility.

Table [SEQ Table * ARABIC]. Bottle Requirements.

ANALYSIS	**SAMPLE VESSEL**
Common elements and trace nutrients	250 mL PE Bottle
Measure: ICP-MS, ICP-AES	
Anions and other water quality parameters	250 mL PE Bottle
Ion Chromatograph, titration	
IF PRESERVATIVE REQUIRED (TBD)	
Toxins	40 mL Amber Vial
TOC/TDN	40 mL Clear Vial
IF PRESERVATIVE IS NOT REQUIRED (TBD)	
Toxins, TOC/TDN	40 mL? Amber Vial

Sample bottles will be shipped to the facility in a cooler along with pre-paid return postage. The cooler will include a sample sheet for the facility to fill out and return. The following information will be asked

for at the time of sampling, if readily available (sample day/time, temperature, pH, turbidity, specific conductance, final chlorine residual and sample collectors initials). Sample facilities will be designated by code and in-plant sampling locations labeled accordingly. After sampling, bottles can be placed back into the cooler and shipped overnight under ice.

Sampling Dates:
Samples would be collected on a monthly basis to establish baseline, pre-bloom, conditions and to evaluate seasonal trends in chlorophyll concentrations and algal blooms. In addition to monthly sampling, sampling would target occurrences of algal blooms associated with the DW facility's application of copper sulfate. We anticipate this will result in more samples toward the end of the summer.

June 30
July 28
August 25
Sept 15
Additional dates TBD (based on occurrence of algal bloom)

Analytical Work:

ORD Sample Preparation and Preservation. All samples sent to ORD will be processed within 24 hours of receipt. The samples will be processed and preserved as shown in [REF _Ref356207380 \h * MERGEFORMAT].

Table [SEQ Table * ARABIC]. ORD Sample Preparation and Preservation Requirements.

ANALYSIS		**PREPARATION/PRESERVATION**
ICP-MS, ICP-AES (250 mL PE Bottle)		Acidified with HNO_3, stored at 4°C
Anions /Other (250 mL PE Bottle)	Split: 20 mL Anions by IC	Stored at 4°C
	20 mL ClO_4	Stored at 4°C
	200 mL Titration Analysis	Stored at 4°C
	TOC/TDN	Acidified with H_3PO_4, Stored at 4°C
Chlorophyll a (250 mL Bottle)		GF/F Filter, Stored at -20°C
Toxins (40 mL Amber Glass Vial or 100 mL Amber Glass Bottle)		XXXmM $CuSO_4$ (TBD), GF/F Filter, Stored at 4°C

*Note: Only the exocellular dissolved-phase toxin concentration will measured as part of this project.

ORD Analytes. Three classes of toxins will be measured. These include the microcystin cyanotoxins, other water-borne toxins and mycotoxins. A total of 20 individual toxins will be measured, and a number of additional analytes will also be measured ([REF _Ref356210023 \h * MERGEFORMAT]). These water quality parameters include trace metals, nutrients, anions and chlorophyll a. These analytes will be important to understand the relationship between nutrient load, algal bloom occurrence and toxin release.

Table [SEQ Table * ARABIC]. Toxins and Other Water Quality Parameters for Analysis by ORD.

Toxins		
Mycotoxins		
Aflatoxin B1	Aflatoxin G1	Aflatoxin M1
Aflatoxin B2	Aflatoxin G2	
Microcystins		
Microcystin LA	Microcystin LW	Microcystin WR
Microcystin LF	Microcystin LY	Microcystin YR
Microcystin LR	Microcystin RR	Nodularin
Water-Borne Toxins		
(+/-) Anatoxin A	Domoic Acid	Okadaic Acid
Cylindrospermopsin	Fascaplysin	Tautomycin
Trace Metals		
Aluminum	Arsenic	Barium
Beryllium	Bismuth	Cadmium
Chromium	Copper	Iron
Lithium	Manganese	Nickel
Lead	Antimony	Selenium
Tin	Strontium	Thallium
Uranium	Vanadium	Zinc
Common Elements		
Calcium	Potassium	Magnesium
Sodium	Phosphorus	Silicon
Anions		
Chloride	Bromide	Bromate (BrO_3)
Chlorite (ClO_2)	Chlorate (ClO_3)	Perchlorate (ClO_4)
Flouride	Nitrite (NO_2)	Nitrate (NO_3)
Phosphate (PO_4)	Sulfate (SO_4)	Sulfur
Other Water Quality Parameters		
Ammonia (NH_3)	Total Alkalinity	Total Organic Carbon (DOC)
Total Dissolved Nitrogen (TDN)	Chlorophyll a	Total phosphorus

EPA Region 8 Lab Analysis

Duplicate Cyanotoxin samples will be collected for microcystin ELISA analysis at the EPA's Region 8 Laboratory. These samples should be conducted at the same time and place as the samples for ORD. EPA Region 8 Laboratory personnel will drop off sample kits and pick up samples the day of sample collection with the exception of the first cooler and bottle set, which will be shipped. The first cooler and sample kit will be shipped to the drinking water facility prior to the sample collection date. Subsequent bottle sets will be delivered when coolers and sample bottles will be dropped off at the drinking water facility when samples are picked up on the day of collection. Samples will be placed on ice after collected and will be frozen upon arrival at the EPA Region 8 laboratory.Cyanotoxin samples will be split with EPA Region 8's Golden lab. These samples will be frozen and an ELISA total analysis will be conducted for each sampling location.

Analytical Project Requirements

Analyte	Container Type	Preservative	Holding Time
Total Microcystin Lab ELISA*	1 L glass amber (half full)	Freezing	30 days

Project Coordination and Communication:

The results of the analysis will be shared by EPA ORD and Region 8 staff with the DW Facility and CDPHE. EPA Region 8 staff will also be available throughout the summer should any questions about this project arise.

FY2013 WI DNR PUBLIC WATER SYSTEM SUPERVISION PROGRAM
WORK PLAN SUMMARY
October 1, 2012, through September 30, 2013
Reported as of 7/11/13

Contacts:

- WI DNR Public Water Supply Section Chief – Steve Elmore, Steve.Elmore@wisconsin.gov, (608) 264-9246
- U.S. EPA Region 5 (R5) WI State Program Manager – Joe Janczy, [HYPERLINK "mailto:Janczy.Joseph@epa.gov"], (608) 267-2763

Federal funding used: PWSS grant; Drinking Water State Revolving Fund (DWSRF) State program management, local assistance (for capacity development and wellhead protection), and small system technical assistance set-asides; Operator Certification Expense Reimbursement grant; and Clean Water Act Section 106 funds (ground water)

NOTE: Click on the links below for summaries and more detailed information about WI's implementation of the national primary drinking water regulations (NPDWRs) or any of the activities below.

1. [HYPERLINK "https://epaqpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015BBF6.nsf/h_Toc/a4c0568ac09b2fc5852579c700161d51/?OpenDocument"] —WI DNR is implementing all of the drinking water rules, except where noted as discrepancies in the linked table. WI DNR does not have primacy for FBRR, LT2SWTR, GWR, LCRSTR, Stage 2 D/DBPR, and V & E, but has submitted them to R5 for primacy. R5 completed review of GWR and LCRSTR and corresponded with WDNR about necessary revisions. R5 continues primacy review for the other rules. R5 tracks state reporting of new rule violations (LT2SWTR, GWR, LCR, and Stage 2 D/DBPR). As of April 2013, WI DNR reported:

- No LT2 violations
- 281 GWR source water M/R violations
- 30 Stage 2 M/R violations
- 443 LCRSTR consumer notification M/R violations

Region agrees to provide primacy findings for Stage 2, LT2, FBRR, V &E, and other minor revisions ("the crumbs") to WDNR by January 1, 2014 so that they can be incorporated into state code revisions that will include RTCR.

WI DNR BDWGW is discussing RTCR implementation strategies with its statewide management team, and will update Miguel Del Toral as the path chosen for implementation becomes clearer.

2. [HYPERLINK "https://epaqpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700157D04.nsf/h_Toc/9ba56cee8247ce01852579c700167798/?OpenDocument"] – WI DNR maintains staff with the technical expertise needed to perform sanitary surveys. WI DNR ensures that sanitary surveys are conducted periodically that, in the vast majority of cases, meet frequency requirements specified by rule. For TNs in contracted counties, WI DNR must manage and continue to evaluate the performance of sanitary surveys conducted by county health

departments by reviewing the extent to which significant deficiencies are being identified, and whether frequency requirements are being met. R5 tracks state commitments to conduct sanitary surveys within the federally required intervals. As of April 2013:

- SURFACE WATER SYSTEMS: 100% (56/56) of the sanitary surveys at Subpart H systems were completed between 2010 and 2012.
- GROUND WATER SYSTEMS: 97.9% (973/994) of CWSs were completed between 2010 and 2012. 99.6% (779/782) of NTNCWSs and 99.6% (8822/8855) of TNCWSs were completed between 2008 and 2012.

Performance is solid. WI DNR has internal oversight procedures to review the quality of sanitary surveys performed by your contracted county health departments.

3. [HYPERLINK "https://epaqpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70016055A.nsf/h_Toc/50a7a2f7c68b0990852579c7001671af/?OpenDocument"] — The state is meeting expectations because: (1) R 5 maintains certification for the Wisconsin State Laboratory of Hygiene (WSLH), (2) the program uses direct certification and reciprocal agreements to certify commercial labs within the state, and (3) a process for ensuring capacity to analyze at the principal state lab or commercial labs all NPDWR parameters that are required to be sampled in the state is maintained. Laboratory certification responsibilities in Wisconsin are split between the WI DNR (chems), and WI DATCP (micro). Potential areas of concern include certifying labs for cryptosporidium, radionuclide, and asbestos analysis.

R5 no longer certifies private labs for drinking water analysis. WI DNR will not commit resources to independently certify them either. Unless an agreement is reached to have some party handle certification, Wisconsin will only have one radionuclide certified laboratory by the end of 2014. Rita Bair will continue to work with Al Alwan and Alfredo Sotomayor to find an acceptable private lab certification approach for radionuclides and asbestos.

4. [HYPERLINK "https://epaqpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C70015D26C.nsf/h_Toc/d247c4442932350b852579c700165c4b/?OpenDocument"]—WI DNR will ensure public water systems regain compliance with NPDWRs. R5 tracks state commitments under measure SDWA02 and updates WI DNR quarterly. WI DNR's 2012 commitment is to address or resolve 120 systems, and has met this commitment by addressing or resolving 135. For 2013, WI DNR commits to address or resolve 38 systems. WI DNR does not commit to follow-up on CCR, and LCR Consumer Notification violations. WI DNR does not commit to follow-up on PN violations originating from Tier 2 and 3 violations. R5 looks forward to discussing WI DNR reinvestment as program vacancies are filled.

WI DNR is exploring several reinvestments under different timelines as vacancies are filled. However, state and federal resource reductions could jeopardize them. Some of the WI DNR disinvestments are long standing and R5 needs to see progress made in closing these gaps. Our priority is for the WDNR to fully reinvest in LCR consumer notification violation follow-up. R5 will look into whether erroneously reported violations that are three-plus years old can be removed from SDWIS/FED.

5. [HYPERLINK "https://epaqpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700159C89.nsf/h_Toc/f773ba3fde21dac7852579c7001641c9/?OpenDocument"]— WI DNR maintains a data management system that tracks requirements for all rules and serves as the central store of data reported by laboratories, field offices and County Health Departments. WI DNR uses FedRep 3.2 , but needs to upgrade to 3.4, to report GWR TT violations to EPA. PWS Monthly Operating Report information is now being submitted, captured and stored electronically in DWS. WI DNR's reporting of TCR and nitrate violations continue to improve. In 2011, 99.6% of the TCR violations and 100% of the nitrate violations were reported on-time.

WI DNR will have the FedRep 3.4 upgrade complete for the November 2013 data submittal which will allow the exchange of GWR TT violation information to SDWIS/FED.

6. Security – WI DNR is expected to adopt and implement an adequate plan for the provision of safe drinking water under emergency circumstances including, but not limited to, earthquakes, floods, hurricanes, and other natural disasters. R5 will review state emergency plans and consult with the state on implementation capabilities.

A waterworks security summit will be held in WI in September. The State's pandemic flu plan needs more detail to be effective during an emergency.

7. [HYPERLINK "https://epaqpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158EB5.nsf/h_Toc/919b620e10f28d06852579c7001669e9/?OpenDocument"] —WI DNR established and maintains minimum professional standards for the operation and maintenance of all public water systems to ensure that skilled professionals are overseeing the treatment and distribution of safe drinking water and to promote compliance. WI DNR annually – by September 30th each year – provides documentation to EPA showing the ongoing implementation of the program to avoid 20% withholding of the DWSRF grant. On June 30, 2012, only 10 of the 1,919 WI systems required to have a certified operator did not have one. WI DNR improved its data system to revise exams more efficiently. It should update its study guide and exam questions to reflect new rule requirements.

R5 will clarify the DEI reporting requirements for Type 12 – lack of qualified operator violations, and WI DNR commits to begin reporting these violations in the future after higher priority SDWIS reporting gaps are filled.

8. [HYPERLINK "https://epaqpx.rtp.epa.gov/QuickPlace/region5statepwssprograms/PageLibrary852579C700158751.nsf/h_Toc/b64a188dd87b1337852579c70016637d/?OpenDocument"] —WI DNR ensures that new and existing CWSs/NTNCWSs can demonstrate technical, managerial, and financial capacity to operate in compliance with federal and state regulations. WI DNR annually - by December 31st each year - provides documentation to R5 showing the ongoing implementation of both the new systems program and the existing systems strategy to avoid 20% withholding of the DWSRF capitalization grant. The annual report should address the new capacity development reporting measures. Some examples of the numerous activities taken by the WI DNR to strengthen system capacity in FFY 2012 include: